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THE CALIFORNIA SOCIETY OF SECONDARY EDUCATION
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DAVID STARR JORDAN
1851—1931

WILLIAM W. KEMP
Dean of the School of Education, University of California

A GREAT man, a great soul has gone from our midst. The death of Dr. Jordan on September nineteenth brought to a close the life of one of America's most distinguished scholars and university builders. No American of his generation lived more richly than he, and none has left a greater impress upon the generation next succeeding. Roosevelt and Jordan, unlike in many particulars, are comparable figures in some of those engaging characteristics which touch the hearts of the people and inspire youth. Both lived intensively, offering at the same time examples of clean, abundant living; both were militant for righteousness; both pressed on from philosophy, theory, principle, science, to application in a world of activity; and both met the challenge of life with zestful enthusiasm.

"Jungle and town and reef and sea,
I have loved God's earth and God's earth loved me,
Take it for all in all!"

In his memoirs[1], which were written ten or more years ago, Jordan describes himself as one living "three more or less independent lives: first, and for the love of it, that of a naturalist and explorer; second, also for the love of it, that of teacher; and third, from a sense of duty, that of minor prophet of Democracy." His earliest scientific interest was in the stars which he had charted by the age of thirteen, but this interest soon turned to the flowers and the trees and then to animal life as he assumed the care of his brother's sheep when the latter was called into war service. Jordan's first scientific paper was entitled "Hoofrot in Sheep".[2] Entering Cornell in 1869, he was able to pay his way by botanical work and instructing in botany. Jordan's days at Cornell present a man touching all angles of the intellectual life of the college. Biological science always taking first interest, he never-the-less found much time to delve into literature and history. Student life in company with scholarly companions, later his colleagues, was joyous, tingeing their every memory of Cornell with the ineffaceable charm of the university's atmosphere and setting. Here Jordan made a notable contact in the person of Andrew D. White, Cornell's first president; and the contact was prophetic of his great leadership when he should become first president of Stanford University, for it developed into a friendship which "opened the door to the experiences of half a lifetime in California." "The early years of my Alma Mater", he wrote, "though relatively crude and cramped, were enriched by an enthusiasm hard to maintain in days of prosperity. And the pioneer impulse far outweighed, to our minds, any deficiency in coordination, equipment, or

[1] "The Days of a Man," World Book Company, N. Y.
[2] Published in *Prairie Farmer*, 1871.

tradition. At that time we were all young together, freshman students, freshman professors, freshman president, without experience, or tradition to guide or impede. But we had youth and we had truth." These words are written of Cornell, but they just as fairly describe the early, the pioneer days of Stanford.

Upon graduation in 1872, Jordan accepted a professorship of Natural Science at Lombard College, Galesburg, Illinois. However his "chair" called for classes not only in Zoology, Botany, Mineralogy, Chemistry and Physics, but also Political Economy, German, Spanish and Paley's "Evidences of Christianity." In an extra-curricular way he was made responsible for weekly literary exercises, was pitcher for the student ball team and conducted a Sunday-school class. For the total of these activities he received an annual salary of thirteen hundred dollars.

The next year the first summer school of science was opened by Professor Agassiz on a small island off the coast of Cape Cod. Jordan became a member of the first class and so continued for successive summer schools here or at Wood's Hole. Probably no other incident was quite as momentous for young Jordan's future as this association with the greatest naturalist of that day in America. It directed his scientific work into specialization in sea life; it gave him contact with the future leaders of biological science; it converted him to Darwin's theory of divergence through natural selection and it was the inauguration of a period of scientific achievement which brought him recognition as the world's greatest ichthyologist, and one of the greatest naturalists and explorers.

Jordan began his Indiana career as a teacher of science in the Indianapolis High School and served for one year. Interesting his students in the bird life of the district, he now began the collection of birds and out of the study produced his first real contribution to science, "A Manual of Vertebrates of the Eastern United States," published in 1876. He was next elected to the professorship of Biology at Butler College (then University) in one of the suburbs of the capital—later he was made Dean of Science. At intervals during this period he served as a member of the staff of the Smithsonian Institution at Washington, making scientific explorations into the southern states and along the Blue Ridge mountains. In 1879 he became professor of Natural History in Indiana University and soon thereafter was sent to the Pacific Coast for an assignment of work by the United States Fish Commission. This was Jordan's first introduction to California. In fact, the entire period of his professorship (1879-1885) was interspersed with explorations about the interior or along the coasts of America and also with European travel.

In January, 1885, Jordan became President of Indiana University, and the youngest university president in the country. Now began that careful study of university administration which eventuated in bold changes, doing away with the traditional and fixed curriculum and bringing students into close counsel with professors. The underlying philosophy was that the university exists for students, not the students for the university. Hence, each student must have an individual course of study worked out with the

kindly advice of a teacher impelled by a personal interest in his welfare. And the early student generations of Stanford fell heir to this new philosophy of curriculum organization and student-faculty relationship. It was Jordan's decision not to abandon either research or teaching, and to this he adhered throughout his services as a university executive at Indiana and Stanford. His scientific publications and his governmental explorations increased and were more noteworthy than in earlier years of his professorships. No other university president has produced in like amount. For his teaching service he developed at Indiana a lecture course which came to be known as the Science of Bionomics. This was repeated at Stanford where it became the most prized course offered in the young university and where by a sort of unwritten law it was included in the program of every student.

"In the spring of 1891," writes Dr. Jordon, "I was suddenly called upon to make a momentous decision, profoundly affecting the remainder of my life." This was the call to the presidency of Leland Stanford Junior University, and his acceptance marked a profoundly important event in the history of higher education. The story of the early years of Stanford is a glorious educational romance too well known to need the repetition of details before California readers. The genius of the young president was at once exhibited in the excellence of his faculty selections. Choosing first a few "thoroughly tested men" from his colleagues and acquaintances at Indiana and Cornell universities, he added others from Johns Hopkins and Iowa and completed the staff with younger scholars. The accuracy of his judgment has been fully attested in the brilliant achievements of the Stanford faculty throughout its history.

It was the writer's privilege to be present at the opening exercises of the university, though only as a junior student in a neighboring preparatory school. The impressive figure of the president, his address, so understanding as to the occasion and so completely evidencing the noble character of the man, are doubtless unforgettable incidents in the lives of every student there present.

"Ours is the youngest of the universities, but it is heir to the wisdom of all the ages, and with this inheritance it has the promise of a rapid and sturdy growth.

"Our university has no history to fall back upon; no memories of great teachers haunt its corridors; in none of its rooms appear the traces which show where a great man has lived or worked. No tender associations cling, ivy-like, to its fresh, new walls. It is hallowed by no traditions. It is hampered by none. Its finger posts all point forward. Traditions and associations it is ours to make. From our work the future of the university will grow, as the splendid lily from the modest bulb.

"But the future, with its glories and its responsibilities, will be in other hands. It is ours at the beginning to give the university its form, its tendencies, its customs. The power of precedent will cause to be repeated over and over again everything that we do—our errors as well as our wisdom. It becomes us, then, to begin the work modestly, as under the eye of the coming ages. We must lay the foundations broad and firm, so as to give

full support to whatever edifice the future may build. Ours is the humbler task, but not the least in importance, and our work will not be in vain if all that we do is done in sincerity."

The university's enrollment went beyond all expectations. From California, from the Middle West, and from the East they came in such numbers that it was necessary to enlarge the teaching staff at once. All went well until the death of Senator Stanford in 1893 plunged the institution into a financial embarrassment which all but closed its doors, and which continued with varying degrees of acuteness throughout Jordan's presidency. But with faith and calmness he faced the heavy responsibilities now shared by Mrs. Stanford. Only intimate friends ever knew in full the anxieties of that first decade. To the students Jordan was the ever-resourceful executive, finding always ample time for exploration, research and lofty teaching. To him as philosopher and friend they could go, and in spite of his burdens he was ready with the appropriate counsel. "Remember, students," one still hears the echo, "the world usually stands aside to make room for young fellows who know whither they are going."

In the closing years of his life and particularly after he had been made Chancellor and was thus relieved of the administration of the university, Jordan served chiefly in the role of "minor prophet of Democracy." But this phase of his life reaches back to the beginnings of his administrative functions. The Indiana presidency brought him into contact with the political leaders of the state and of neighboring states. Garfield, Cleveland, McKinley, and Roosevelt were early acquaintances. For years he was an intimate friend and indeed an adviser of Roosevelt. Coming to Stanford such relationships expanded and to these, through his travel, he added foreign statesmen, particularly those of England and Japan. Foreign statesmen, hurrying hither and yon, missionaries of inconceivable creeds, "beetle-browed revolutionaries," "advocates of war, as strengthening experience, holding the muscles and stiffening the nerves of a nation,"—all these entered into the mosaic of his active life. The Spanish-American War, and later the Boer War, seemed to have been a challenge to him to cry out against the wanton havoc of war. "War is destructive to race virility." During this period of years he wrote much in protest, as for example: "War and Manhood," "Blood of the Nation," "War and the Breed," and "The Human Harvest." Indentifying himself with all those movements looking toward arbitration and conciliation, he became one of the most persistent and active leaders. The very outbreak of the World War found him in Europe traveling from capital to capital as an Apostle of Peace. To him the month of August, 1914, was the "month of horror" which bit deeply into his sensitive and generous mind.

"He reaps dire harvest who sows dragon's teeth!
When Law is silent, anarch murder rules;
Law is humanity's consummate flower,
And Love is the fulfillment of the Law;
Its blind and brute denial, that is War.
The Laws of War! In war, there is no law.
Where war is not, there and there only—Law.

"Oh, take away the frippery of war,
Its zest for glory, its mouth-filling lies,
Its rippling colors and resounding drums
Its chargers, bannerets, and bugle calls,
Its heady wine of music and acclaim
That make a slaughter seem a holiday!
Oh, take away the sanction of the State,
That haloes murder with a holy light,
That makes our common hate seem Wrath Divine,
And thunderous shoutings as the voice of God.

* * * *

"Shall God not fill another universe
With Life we waste in wicked wantonness?"

Naturalist and explorer, teacher and minor prophet—three lives "more or less independent"—but the picture is not quite complete. It is necessary to recall the underlying philosophy of this commanding scientist, best epitomized by his own statement: "Right action is the final purpose of science, and in like fashion and in the same degree the acquisition of truth is the crowning glory of human endeavor"; to recall the gentle humanity of the man:

"Out from the ruthless ages
Rises, like incense mild,
The love of the man and the woman,
The love of the mother and child;"

to recall the patriot summoning his sons and daughters to high allegiance:

"The Future beckons; may it be
The land where every dream comes true,
The land in which each humblest child
Shall live as free as I or you;

"The favored land of noble youth,
The land where hatred dies away,
The land where each may know the truth;
The chosen land of Liberty!"

And yet, to the hosts of Stanford sons, scattered to all lands and all climes, David Starr Jordan will abide in fondest memory because he was to them the exemplar of achieving manhood at its best, to them the nation's greatest inspirer of youth.

"Put out the light!" Altho the stars were dim,
What need of feeble flickering lamps to him
In that high-altared hour? The touch of sleep
Had brought remembrance of his tryst to keep—
A morning tryst—with God's gray messenger.
No sound—no cry—no hesitating stir;

* * * *

"Put out the light!" Men smile through falling tears,
Remembering the courage of his years
That stood, each one, for God, Humanity
And covenanted world-wide Liberty

* * * * *

"Put out the light!" He needs it not who won
A place of permanence within the sun!"[3]

[3] From Edith Daley's tribute to Theodore Roosevelt.

"NEW OCCASIONS TEACH NEW DUTIES"

(Contributed)

IN a recent radio address from London to the people of the United States Mahatma Gandhi said: *No man ever loses his liberty save through his own weakness. Weakness or strength lies in the mind rather than in the body. War is the method of the brute world. Persuasion is the method of the rational world. Education is the only real solvent for the world's problems.*

Great words, spoken once again by a great idealist who has completely lost himself in his cause. And thus losing himself, Gandhi may move the world forward.

How about our part in education and its more rapid advancement by losing sight of ourselves? *High school teachers and principals are today enjoying a better economic status than ever before in the United States.* In the midst of the greatest depression this country has ever known high school salaries have been very generally maintained and in many places advanced by a stated annual increase. All these high school salaries have been still further increased by the greater purchasing power of the dollar—about twenty-five per cent. Truly the high school forces are today occupying a very advantageous position economically.

Contemplating this improved economic status of high school teachers, we might say, with considerable justice perhaps, "It is about time for seven fat years to balance the many lean years of the past." But further reflection will reveal the greater obligation, thrust upon us by our improved economic status, to make high school education more truly and promptly effective. *The problems of democracy are the opportunities of education.* Fortunate it is that we are in position to grasp these opportunities and thus render improved service to our country and the world in this time of trouble and need.

To make our efforts most effective, we need a larger measure of co-operation. No man liveth unto himself alone, and no teacher worketh to the best advantage by himself alone. We are all working toward a common end—a world made rational through education. To arrive at this orderly pattern we must pull together. And pulling together necessitates the development of the social virtues of understanding, sympathy, and trust. Add to these the individual virtues of courage and energy, and we shall have proved worthy of our calling and of our present great opportunity.

Most human beings worry themselves into nameless graves, while here and there a great unselfish soul forgets itself into immortality. Can we reach Gandhi's class?

THE TEACHER AND THE RECORDS OF THE CHILD

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ONE of the fruits of the current efficiency and child-accounting movements is the accumulation in the central files of school systems of masses of recorded data about children. Infinite time and effort go to the recording of information about marks, school achievements, health history, family history, intelligence and special abilities of children, and to filing these in up-to-the-minute systems of cards or packets in the administrative offices, where frequently the only use made of them is for promotion or dismissal, or the compilation of statistical administrative data. Stowed away in the office files, safe from inquisitive teachers, lies a rich mine of objective data concerning each child's personality and potentialities, his assets and his liabilities, his interests and dislikes, his successes and his failures, his health and his home background—all information infinitely valuable to the classroom teacher who is interested in furthering the development of every child in her group. More often than not, such teachers report with some bitterness that the files are closed to them, and that the only contact they have with records and reports is when they do the clerical work connected with the recording of them. The opening of the school files to the classroom teacher is a subject which requires more consideration than can be given to it in this paper. Perhaps both teachers and administrators need some education in the use of records before they are thrown open to general use. There is reason to think that even if the files were freely open to the classroom teacher as a source of data to use in interpreting pupil behavior, a large percentage of teachers in service, and doubtless a large percentage of administrators, would find it difficult, if not impossible, to interpret the hieroglyphics on record cards, and to use the recorded data as an aid to intelligent interpretation of the day-by-day behavior of the youngster, and intelligent adjustment of their work to his specific needs.

In the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION for January, 1930, Meyer reported a study in "Growth and Development of Children," made in a summer session class in a California university, in which he analyzed term papers written by one hundred sixty-nine teachers, each dealing with the most important child "problem" encountered during the previous school year. Meyer emphasized particularly the meagre information possessed by these teachers, and the almost total lack of objective record data cited by them, and their failure to interpret the child's difficulties in the light of what objective data they might possess. He recommended that more adequate records be kept, and that teachers be given specific training in their use.

The Meyer study suggested the experiment of trying out a class of teachers on the interpretation of sample records of an actual child. The opportunity presented itself in another summer school class in "Growth and Development of Children" in the same university. This class was made up of two hundred forty-six upper division and graduate university students. Eighty per cent of the class were well-educated, well-trained teachers of experience. Half of the class were high-school teachers. None in the group had less than two years of training above high school; two-thirds had at least four years of collegiate training; ten per cent held Master's degrees. One in four of the group had some administrative experience. As a background for the interpretation of records, practically all had "taken" a course in elementary or secondary education; eighty-five per cent had been exposed to educational psychology; over eighty per cent claimed two or more college courses in biological science. From this training, it was reasonable to suppose that at least eight out of ten in the class should have some criteria for judging ability, school achievement and physical equipment of children, even apart from their teaching experience.

To this group, prior to any discussion and instruction in the use of school records, there was given, as an unprepared class exercise of one hour, the mimeographed transcript of records of "Mary," a high school girl. The child whose records were selected for study was a "normal" child; she was not, in the conventional terms of the clinic, a "problem case." Her cards were chosen merely because they offered a fairly complete record of her health and school progress from the time of her entry in the first grade. In lieu of a personal observation of Mary, there was added to the transcript of records a description of the child and of her school situation, and a student-observer's verbatim diary-record of her behavior during a half-hour in school. Prior to the class exercise on her records, the group had discussed criteria for recognizing a well-built and well-functioning body, but no specific application had been made of the criteria in connection with records. Without further instruction, the summer class was asked to interpret the objective data about Mary on an attached form, under prescribed heads, in terms of the child's physical condition, native learning ability, and educational and social progress.

In order to have a criterion against which to check the skill of the class in locating and interpreting the information on the transcript and diary-records, the investigator made an analysis of the same materials, on bases set up by authorities in the various aspects of child development for which there were data on the records. This analysis was criticized and revised by a jury of three recognized experts in the field of child development. Items agreed upon by investigator and jury as valid items concerning which there was objective evidence on the "Mary" records are listed in Table I, together with the frequencies with which the items were noted and correctly interpreted by the class. Since Mary was a high

school child, a separate check was kept on the analysis made by the secondary teachers in the class, the results of which appear in the third and fourth columns of Table I. No significant difference was found between the skill of the secondary teachers and that of the rest of the group in the interpretation of the record data. The figures used in the following discussion refer to the work of the secondary teachers.

Space does not permit the inclusion here of the "Mary" transcripts and the full analysis as made by the accredited jury. In brief, the picture given by the data at hand was as follows:

> Mary is fifteen and a half years old, and is in the low twelfth grade. She has normal adolescent interest in play, and generally friendly reactions toward adults and boys and girls alike. She is neither shy nor excessively aggressive. She has an I. Q. of approximately 120, and is accelerated nearly two years in school. Her early school work carried uniformly grades of "excellent" and "good," but during the last two years her grades have fallen to "good" and "fair," and there is record of one failure. The health records show that by accepted standards she has good physical endowment, but that for a year or two, coincident with the falling grades, there has been unsatisfactory functioning, as shown by headaches, infections and sore throat. The diary record shows evidences of listlessness and fatigue, with apparent indifference to class work. The medical history mentions a tonsillectomy, the date of which is just a week prior to the diary-observation.
>
> The tentative hypothesis is suggested that the deterioration in school work and present lack of interest may be due to chronic tonsil infection, and to the operation —too recent to permit of physical recuperation. Rest and a modified program should be tried pending complete recovery.

Reference to Table I shows that while approximately three-quarters of the class credited Mary with a good native endowment, only one-quarter to one-half of them noted or mentioned those details of nutrition, vital organs, vision, hearing, teeth, which are the recognized signs of such endowment. Approximately three-quarters of the group made note of Mary's bad throat, but only a little over half noted the tonsillectomy, and approximately twelve per cent saw that the operation was of very recent date. Nearly half the group mentioned the headaches, and a third noted the fact that her skin was under treatment. So few as five per cent associated the skin infection, the headaches and the tonsillar infection as having possibly a common cause. Very few recognized symptoms of either nervousness or fatigue in her recorded behavior. Less than three out of ten showed any indications of recognizing that the records show evidences of a well-built body temporarily showing bad functioning, for which a possible cause may be found in the tonsillar infection and recent tonsillectomy which has left vitality depleted. (Item 18, Table I.)

TABLE I.

Summary—Analysis of "Mary" Records by Summer Class.

ITEM	246 Students		113 Secondary Teachers	
I. *Physical Endowment and Functioning*	Cases	Percent	Cases	Percent
1. Good Endowment	175	71	84	74
2. Good Functioning	65	26.4	35	30.9
3. Good Nutrition	126	51.2	57	50.1
4. Sound Heart and Lungs	84	34.0	32	28.3
5. Good Vision	123	50.0	57	50.1
6. Good Hearing	87	35.2	41	36.2
7. Sound Teeth	77	31.2	35	30.9
8. Unobstructed Nasal Breathing	64	26.0	28	24.8
9. Bad Throat	183	74.5	82	72.5
10. Headaches	112	45.0	53	47.0
11. Posture, Back	217	88.0	93	82.0
12. Skin under Treatment	92	37.1	40	35.1
13. Infection, General	21	8.5	6	5.3
14. Tonsillectomy	127	51.5	64	56.5
15. Recent Date of Tonsillectomy	31	12.6	13	11.5
16. Fatigue Symptoms	34	13.8	15	13.2
17. Nervous Symptoms	55	22.3	26	23.0
18. Insight into Physical Condition	70	28.3	32	28.3
II. *Native Learning Equipment*				
1. Rated as Superior	195	79.5	93	82.0
2. Rated as Average or Normal	49	19.8	19	16.8
3. Rated as Dull	2	0.8	1	0.0
4. Figured I.Q.	59	24.0	27	23.8
III. *Educational Development*				
1. Rated as Accelerated	100	40.6	43	38.0
2. Rated as Normal	97	39.4	44	39.0
3. Rated as Retarded	44	17.8	22	19.4
4. Deterioration Noted	92	37.4	39	34.4
5. Not Doing Credit to Her I.Q.	87	35.1	45	39.8
6. Slump Associated with Health	47	19.1	16	14.1
7. Attributed to Lack of Interest	133	54.0	56	49.5
IV. *Social Development*				
1. Rated as Normal	117	47.5	51	45.1
2. Rated as Accelerated	52	21.1	24	21.3
3. Rated as Retarded	73	29.7	36	31.4
4. No Rating	4	1.6	2	1.7

In general, it may be said that there was a predominating tendency merely to list the items noted, making no attempt to interpret their significance or relationships. When interpretation was attempted, the tendency was to *read into* the records with the aid of imagination, rather than to *read out* of them the objective information they contain. For example, the item *headaches* was variously interpreted as "due to too much candy," or as "natural in adolescence"; the low rating on *back posture* was said to be "probably due to careless handling in infancy," for none of which inferences is there the slightest evidence in the records. Among the physical items, *posture* came in for notice from eighty-two per cent of the secondary teachers, a larger percentage than any other single item. Mary's bad posture was dogmatically attributed to "indifference," to "lack of interest," to "mental trouble," to "laziness," and to "rapid growth inci-

dental to her age." Nearly every other defect in the list, from her headaches to her lack of interest, was laid at the door of her posture. There was a general feeling that she should brace up and do something about it, or that it should be vigorously "attended to" by her elders.

A considerable number of papers were characterized by a complete failure to recognize anything wrong with the physical welfare of the child. Typical statements are such as these:

The child seems to be in normal health.

There is nothing outstanding except the high quality of her whole development.

Her general functioning is all that one could hope for.

No serious defects. In prime physical condition.

I find her equipment to be normal. Such slight weaknesses as are shown in her tonsils and skin infection should make no noticeable difference.

In the matter of native learning equipment, for which the record evidence is somewhat more objective than for physical welfare, about eighty per cent of the group rated Mary as superior. Of these, eight per cent gave no reason or a wrong reason for so rating her, making a strong presumption that their rating was a guess. Probably three-quarters of the group had some reason for the faith that was in them in this matter, either basing their judgment upon the fact that her M.A. was greater than her C.A., or upon her I.Q. which they figured from the data given. Only twenty-four per cent figured the I.Q. correctly. However, since through inadvertence this computation was not called for on the blank, the statement that only a quarter of the teachers knew how to figure it is not justified. The chief error in connection with this item lay in diagnosing a superior mentality from high grades received in school. Statements such as the following were common:

Her school records show grades of superior intelligence.

She has obtained too many 3's and therefore her native equipment is not normal.

It is a sure thing she is not superior, for her mental age is not all it should be for a girl her age, and her grades are not so good.

Her mediocre grades tend to drag her down. With her tonsils removed, Mary has a chance to become superior.

Of the teachers who rated Mary *normal* in mental ability, about seven out of ten gave no reasonable explanation of the rating, and it may be assumed in these cases to be a guess. It was clear that the meaning of the word *normality* in this connection, and the limits of normality by accepted standards were very vague in the minds of many teachers. Many misconceptions were indicated as to the nature of native learning equipment and the factors which affect it. Thus we find:

The native ability in the lower grades seemed to be better than at present.

Age in N. I. T. was 13-9 and in Thorndike-McCall, 13-8, and in Terman Group 15-6. This shows she is neither brilliant nor dull, but rather average.

Her bodily equipment is not normal in all respects, so this would tend to pull down her native learning ability somewhat.

Examination of the ratings given Mary on her educational development shows much uncertainty existing in the minds of the teachers as to what constitutes educational "acceleration" or "retardation." Only about forty per cent of the group rated Mary as educationally accelerated, and of these approximately half gave any valid reason for so rating her.

Almost as many thought her progress normal as rated it accelerated. Nineteen per cent understood the records so little as to rate a child whose grade placement was nearly two years ahead of her age as retarded. Approximately one-third noted that her school work had been deteriorating in quality, and about forty per cent noted that her recent school work was not a credit to her I.Q. Half the group attributed her poor grades to lack of interest, and only about fifteen per cent associated her slump in educational achievement with her recent depression in health. There was a strong tendency to feel that all would be well if her interest could only be aroused. It might be said at this point that the interest *motif* was heavily overworked throughout the whole group of papers. It was rubbed like a magic talisman in explanation of, or as a remedy for, every ill the youngster was found to possess. Again the tendency is apparent to read into the records reasons for which there is no scrap of evidence, as when the statement is made that "a lack of interest is normal to adolescence," and that "Mary's deterioration in school is undoubtedly due to being boy-struck." In connection with the ratings on educational development, a total of one hundred eighty-four out of two hundred forty-six students gave answers which were either pure guesswork or based upon an erroneous notion of the terms *acceleration* and *retardation*.

It is not surprising that in the matter of social development there was much confusion in the rating. Nearly half the group thought Mary normal in this respect, but thirty per cent thought she was retarded, and twenty per cent thought her accelerated. Exactly the same behavior act was used to prove her normality, her acceleration and her retardation:

Retarded—Shows no interest in boys.
Accelerated—Shows undue interest in the other sex.
Normal—Much interested in the other sex—an adolescent trait.

The criteria are obviously subjective and ill-defined, and rating becomes a matter of personal opinion and individual bias. As in other aspects of her development, deductions are made for which the evidence is nonexistent, as:

Is sex conscious.
Knows she wants to be of service.
High I.Q. makes her seek her own self-advancement.

Practically no one connected her social behavior, however they rated it, with the physical condition indicated in the health records. It was a separate phenomenon from all her other traits.

Two other studies, along the same line, were made, using the large winter and spring classes in the same course, which are made up largely of seniors and fifth-year students working for their teaching credentials. The same general results were found; the same confusion as to the meaning of acceleration and retardation, the same haziness as to the significance of the I.Q. and the after effects of the measles, the same touching confidence in that favorite prescription, *interest*.

The outstanding weakness of all the papers studied was a failure to synthesize the items into a picture of a whole child. The prevailing tendency was to list all the defects, with the general notion that these are

little separate repair jobs to be made on the youngster's plumbing, his hardware or his disposition, and only requiring the attention of the appropriate tinker. The student or teacher was satisfied when he had itemized and neatly pigeonholed the different phases of the child's life and well-being, without attempting to explore their interrelationships. The separate chemicals which enter into the reaction were listed, but the phenomena which might result from their presence in the same container were not investigated. Even if we disregard the nebulousness of the teacher's information about I.Q. or school acceleration or tonsils or social attitudes, his strong tendency to follow his academic training in keeping these matters in separate pigeonholes or compartments of knowledge is very evident. He learned these facts, if at all, in separate courses. He keeps them separate. One job in teacher-preparation to which the study of records might contribute much consists in knocking down the partitions between the fields of knowledge and directing the novice-teacher to take her information about the child wherever she can find it, and to make it up into new patterns to fit her needs and the needs of the child she is trying to understand. That she cannot now make such analyses and syntheses, this study has partly shown.

The problem resolves itself into providing for the teacher in training some experience in research in the field of childhood. The methods, techniques and attitudes involved in such child study are essentially the methods, techniques and attitudes of the research worker in any field. They do not come by inspiration nor intuition, but by training and experience. The teacher must be trained to objectivity of attitude and behavior; she must acquire the ability to see things as they are, and to deal with them on that basis, without bias or prejudice. She must have a true but quite unsentimental interest in the subject of her research, the child. She must learn to search painstakingly for all the evidence, to weigh it when it is in, and from it to draw valid inferences and to make workable recommendations. She must learn to check the results of her recommendations, and to make new deductions, if necessary, in the light of her findings. There is nothing stereotyped nor static about the biological materials with which the teacher does her research. There can be nothing static nor standardized about her methods or the data she uses.

The records in the files of the school, however scrappy they may be, form a priceless source of raw data for such research. They furnish the back chapters in the youngster's serial story, which throw light on the present situation and help predict the later developments. To the teacher who can prove that she has the skills required in digging out and interpreting the hieroglyphics recorded, and synthesizing them into an intelligent hypothesis as to the child's present difficulties, the files should be open without question. In order that he may recognize the distinct possibilities for good to the children which lie in co-operative use of the school files by the administration and the teaching staff, it is probable that the administrator's training also should include experience in record interpretation.

THE USE OF VISUAL AIDS IN TEACHING GENERAL SCIENCE BY A CONTRACT METHOD

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DEFINITION of Terms. In this article the term "Visual Aids" is not considered in the narrow sense of sight stimulation alone, but in the broader concept of non-verbal or objective aids in instruction. Neither are non-verbal objective aids in teaching thought of as a substitute for verbal instruction, but rather as an addition or a happy combination of the two. For, as Commenius learned long ago: "Language and pictures must go hand in hand," and both unite to work toward the goal of all teaching, namely, the building of experiences.

In all of my general science teaching a contract method is used which combines group and individual instruction. Under this plan the course of study is divided into topical units of work requiring roughly two weeks for mastery. These topical units are called "Contracts." An outline of the material to be covered in each contract is carefully made, a stencil is cut, and each pupil in the class receives a mimeographed copy to serve as a "blue print" around which to build his "House of Knowledge." The first fifteen or twenty minutes of each daily hour period are used for group instruction, experiments, or open forum discussion, and the remainder of the period is usually devoted to individual work.

Educational Purposes of Visual Aids

Often teachers have thought of visual aids as an amusement rather than as a means of building real educational experiences. It is true that they are "interest-getters," but mere interest is not sufficient. The uses of visual aids may be summarized as follows:[1]

1. To recall and make past experiences vivid.
2. To supply vicarious experiences where sufficient experiences have not been had.
3. To synthesize a group of experiences into a broader experience or concept.

In order to make visual aids attain all of these possibilities and to cause them to have the most teaching value we are warned to remember:

1. That visual aids cannot supplant teacher or text-books.
2. That they must be used as a part of the regular lesson, and not as addenda.
3. That they must be closely correlated with the course of study.
4. That teachers should be familiar with the visual aids before presenting them to the class.
5. That the organization of the material must be left to the teacher.
6. That pupils must be held responsible for all material presented.

The Purpose of My Study of Visual Aids

During the four years that I have been developing my contract method of teaching general science at the Westlake Junior High School I have been becoming more and more aware of the need for some sort of per-

[1] Presented in a University of California Extension Course by Mr. L. L. Standley, Principal Burbank Junior High School, Berkeley.

manent set of illustrative diagrams and pictures. Since so much of the instruction takes the form of individual or small group explanation I find myself making the same diagram or drawing on the blackboard or scratch paper many times over. Probably no two students or groups will ask for the same assistance consecutively. There is no satisfactory way whereby one may leave the instructional material on the blackboard, because the space is small and one drawing must be erased in order to make room for the next. Hence, I have been seeking for a solution of the problem.

I have also found that some sort of visual aid—some tangible illustration—some pictured idea—is a potent method of impressing the child's mind sufficiently to cause him to retain the information for future use. Most children have a visual type of memory, and illustrated information makes a lasting impression. This explains a constant desire to learn how and when to use all forms of visual aids which might help in the use of the contract method. Thus far I have gone only far enough to see the great variety of possibilities.

Types of Visual Aids Suitable for General Science Teaching

There are at least ten general types of visual aids which may be made a part of general science instruction. They are only classified here, with a hint as to their possible uses, as the elaboration upon the actual occasion and method of their use will occur a little later in this article.

1. *Exhibits*—Such as California minerals, bacteria gardens, types of leaves, collections of insects, butterflies, telegraph instruments, etc.
2. *Models*—Such as models of the eye, ear and other organs of the body. Also motors, steam engines, pumps, etc.
3. *Excursions*—Trips to Chabot Observatory, United Iron Works, Lakeside Park, Snow Museum, Oakland Airport, etc.
4. *Prints (Flat Pictures)*—Magazine pictures of foods, machinery, peoples, clouds, birds, fish, flowers, etc., mounted and filed away as visual aids.
5. *Charts and Diagrams*—Especially helpful in showing and explaining the parts of flowers, types of machines, structure of objects, etc.
6. *Maps and Globes*—Necessary to show the physical aspects of winds, gravity, shape and tilt of the earth, and facts of time and position.
7. *Stereographs*—Especially helpful to the individual student. They convey the idea of third dimension.
8. *Stereopticon Slides*—(a) Commercial. May be used to stimulate thought and interest and convey information upon almost any subject. (b) Home-made slides.[2] Especially helpful in class presentation of diagrams showing parts and positions of objects. Also useful in presenting printed material.
9. *Still Films*—Helpful in teaching any subject where the concept of motion is unnecessary.
10. *Motion Pictures*—Valuable in presenting processes of manufacture, habits of animals, etc., where the concept of motion is essential.

Relating Visual Aids to Actual Contract Teaching

This topic may be divided according to typical contract units in which one or more types of visual aids have been successfully used.

1. *The Solar System and Its Neighbors.* This contract unit involves the use of many types of visual aids. *Prints* of all kinds of astronomical objects are collected and posted on the bulletin board for reference and

[2] Directions may be secured from the Keystone View Company or the Oakland Visual Center.

study. *Slides* on the subject are obtained from the Oakland Visual Center and are shown and discussed during the group instruction part of the periods. Many *home-made slides*[2] are made for use in teaching the fundamental ideas. In teaching the phases of the moon, tides, and eclipses of the sun and moon a series of slides showing the sun, earth, and moon in their correct positions can most easily create the correct impression upon the minds of the pupils. The position of the sun's family, comparative sizes of the planets, shapes and positions of constellations, motions of heavenly bodies, and even comets are subjects upon which home-made or commercial slides are very useful. The projection lantern is used at the beginning of the period to illustrate some special point on the contract sheet or to answer some puzzled student's question. Duplicate diagrams, like those on the slides, are made on filing cards and are numbered to correspond with the slides and are filed in a card index. When the period for group instruction is over and we are ready for individual work the lantern is disconnected. If some pupil has an individual question concerning the material presented the card duplicate of the slide is used for further personal explanation.

Professor Linsley, Director of Chabot Observatory, is invited to come to the classroom to give an illustrated lecture on astronomy. He always brings an ingenious *model* of the solar system, so arranged that a turn of the handle will cause the revolution of the various planets in their orbits. The planets and their satellites are made in comparative size and position and so this model is a great assistance in helping the students to understand the solar system. It is sometimes possible for Professor Linsley to visit the classroom a second time in order to give an illustrated talk about the sun.

In summing up this contract unit an *excursion* is taken to Chabot Observatory, which is owned and operated by the Oakland public school system as an integral part of our science facilities. A bus that will carry thirty pupils at a cost of $6.00 calls for the students at the Westlake school grounds at 7:00 p. m. and takes them to the Observatory. There the pupils are allowed to look through both the eight-inch and the twenty-inch telescopes, the latter being the largest school-owned telescope in the world. The pupils are usually able to observe six different heavenly bodies through the telescope in the course of an evening. At the same time that the pupils are taking turns looking at the heavenly body through the telescope Professor Linsley, the Director, arranges to have a series of slides shown on a screen amplifying and explaining the object. The moon, Mars, Jupiter, Saturn, Venus, Vega, and star clusters are always of especial interest to the pupils. Many stars and constellations in the sky are pointed out to the students by Professor Linsley and his assistant. The bus returns the pupils to the school grounds at about 9:30 p. m.

2. *Science in Industry.* In the contract unit "Science in Industry," there is a great opportunity to make use of *motion pictures.* The reels are obtained from the Oakland Visual Center, together with a motion picture machine. The films entitled "Lead," "Turning Iron into Steel," "When Trees Talk," "Coal Mining," and many, many others were used

with great advantage. In addition, we have obtained as a permanent school *exhibit* samples of forty different California minerals [3] which show the natural form in which gold, silver, lead, iron, mercury and other minerals occur in nature. A large six-foot *map* of the State of California, divided into counties, upon which will be designated the main minerals produced in each California county, is now being planned.

An *excursion* to the iron foundry of the United Iron Works allows the class to see the melting and pouring of molten iron, and the various stages in the manufacture of iron and steel articles. This excursion is the culmination of the study of science as it applies to the iron and steel industry.

Still films[4] are also made use of in this contract. A still film on the subject of soap shows the steps in the manufacture of soap by both old and new methods, and so may be used to show the effect of scientific advance upon industry. An *exhibit* is also obtained from the Oakland Visual Center showing the materials involved in the manufacture of soap, including cocoanut oil, olive oil, palm oil, tallow, salt, potassium hydroxide, rosin, glycerine, and soap beads. An *experiment* showing the actual making of soap is performed as a demonstration in the laboratory.

Many *prints* (flat pictures) showing the various industries and their relation to science are posted on the bulletin board. *Models* of steam engines, pumps, electromagnets, etc., all form a part of the visual aids used in the study of this contract unit.

3. *The Contributions of Science to the Modern Home.* In teaching this unit many prints are made use of to illustrate the modern methods of lighting, heating, sanitation, cooking, home amusements, etc. Prints showing old-time homes are especially valuable for the sake of contrast. In addition, many home-made slides are made, showing types of lighting equipment, proper position for a reading lamp, law of reflection, types of heating apparatus, refraction, shadows, proper methods of ventilation, color combinations, and so forth.

Of course, the regular experiments and demonstrations which are a part of every contract unit also serve as a part or form of visual aid. For instance, a large box with a glass front and stoppered holes at either end is used to illustrate, by means of burning candles, the principles and methods of ventilation in the home. Bacteria gardens are raised to show the presence of bacteria on coins, door knobs, pencils, dishes, clothing, skin, and so forth, while molds and yeasts grown from different sources in the home are shown under the microscope. These are but types of this sort of visual aid.

Visions for the Future with Visual Aids

It is said that every new educational idea goes through three stages: (a) indiscriminate propaganda, with over-emphasis, (b) reaction and decline, and (c) return to a state of equilibrium, with its true value established. Perhaps I am too optimistic in my estimate of the true value of

[3] This display was secured from the California Bureau of Mines and Mining, Ferry Building, San Francisco.

[4] Made by Stillfilm, Inc., Los Angeles.

visual aids, but I see a great use which may legitimately be their part in contract methods of teaching. I believe that, wherever possible, university extension courses, lectures, or some similar source of information concerning the scope, use, and preparation of visual aid material should be made available to teachers who are interested in visual instruction.

In no sense should visual aids be thought of as a substitute for either text-book or teacher, but as a valuable addition to them. I have already started to make a complete set of home-made slides, to which additions will constantly be made and for which there will be both an index and a set of cross reference, so that the result will be a permanent, expanding set of illustrative material for each contract unit. In some cases these are plain glass slides upon which the desired material has been traced or drawn with special slide ink.[5] Where the material could be reduced to printed form typewritten cellophane slides have been made. Some silhouette picture slides have been made with satisfactory results.

Each vacant drawer in the science room has been labelled and we are endeavoring to collect illustrative prints (flat pictures) and to file them away in the appropriate drawer for future reference. Where the print has general value or interest it is given to the regular school library, where it is mounted and placed in their reference file.

Some experiments have also been carried out with objective tests typed upon cellophane slides and thrown upon the screen and which were answered upon paper by the students.

Gradually material is being accumulated for a science museum containing such specimens as are referred to in the various contract units. Samples of hard wood, soft wood, anthracite coal, bituminous coal, types of leaves, types of seeds, sea shells, mounted butterflies, rattlesnake rattles, silkworm cocoons, cotton bolls, types of California minerals, working parts of electric equipment, etc., find their way into the collection of visual aids.

Commercial slides and still films are of great value in explaining many facts and processes where it is necessary or advisable to stop for explanation or discussion of the various points or steps. Where motion is an essential concept motion pictures are best, but there is always the difficulty of securing a sufficiently darkened room. Their main value probably lies in their interest-creating power as an introduction to a topic and as a summary or review at the end of the study.

Summary

Visual instruction can be made an integral part of regular class procedure if the necessary equipment and electrical connections are available. Both teacher and class should look upon such visual aids as a means of obtaining, or synthesizing, or generalizing experiences in exactly the same way as they accept the other methods of instruction. The aid of all learning is the building of experience, whether the source be verbal or non-verbal, visual or auditory, and all forms of instruction must unite, each in its proper place and proportion, to contribute the maximum of good toward that aim.

[5] Slide ink may be secured from Keystone View Company or from Thaddeus Davids Ink Company, Inc., New York.

AN EXPERIMENT IN CLASS SIZE IN B9 ALGEBRA

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PROBLEM. The question of the efficiency of large class groups is ever present in educational considerations. That there can be an answer to this question which will prove satisfactory from the standpoints of administration, teacher load, teacher satisfaction, and pupil achievement is unlikely for the near future. Many factors other than the size of the class group affect the results to be obtained in any particular class situation. The personality of the teacher, the type of materials to be presented in the course, the ability of individuals of the group, the homogeneity of the group, the work habits of members of the class, and the classroom facilities are such vital factors in influencing teaching outcomes that any consideration which does not include them all is lacking to that extent. The problem of this study is to ascertain the outcomes for a particular controlled situation of two parallel large and small classes and to relate these outcomes to certain major factors of that situation.

Materials and Procedure. Approximately one hundred pupils were assigned for instruction in B9 (beginning) Algebra under one teacher in the Thomas Starr King Junior High School of Los Angeles. The group was divided into two classes, one class being double the size of the other. The division was equally balanced according to I.Q.'s insofar as individual programs would permit. About one-third of the total group had been in the teacher's A8 Arithmetic class the previous semester, and these pupils were now divided between the two groups in proportion to the size of the classes.

As it is a policy of the school in which this study was conducted to continue groups in classes with a minimum of changes from semester to semester, members of each group were curious as to the reason for the formation of the two groups formed for this study. They were told that the groups had been formed for experimental purposes, though the precise nature of the experiment was not disclosed to them.

As far as was possible conditions were made comparable in the two groups. The small or control group met in the teacher's regular classroom, which had thirty-nine fixed seats and blackboard space on three walls having approximately thirty-six linear feet of blackboard. This room is on the street side of the building where an average amount of traffic passes. The large or experimental group met in the music room. Here the seats were chairs with writing arms attached. There were seven rows of three chairs on one side of the room and eight rows of six chairs

on the other side, giving a seating capacity of sixty-nine. The windows opened on the girls' physical education playground. A portable blackboard about three feet by six feet provided the only available blackboard space. The room had sufficient cupboard space for the storing of scratch paper and supplementary texts.

In the large group at the beginning of the term stress was laid upon the greater need of individual responsibility in matters of conduct, concentration, and regular attendance than perhaps had been previously felt in smaller groups.

Intelligence tests had been given to all pupils included in this study at the time of their entrance to junior high school. A prognosis test was given during the first week of the term and quarterly tests were given during the term. A final test compiled by the Division of Psychology and Research and based on the text used in the class was given during the eighteenth week of the semester and was followed the next week by a standardized test on the first semester of algebra. The prognosis test was given to determine the relative aptitude of the two groups in the algebraic work, and the later tests to measure the relative accomplishments of the two groups. A set of questions designed to get personal reactions of the pupils as to work conditions and success achieved was presented to the classes near the end of the term.

During the term a few unavoidable changes were made in the groups. A few children transferred to other schools and a number of new children entered the groups. There were, however, eighty-three pupils for whom records were essentially complete—fifty-five in the large group and twenty-eight in the small group, making the groups used for consideration in this study proportional in size to the totals of the classes as first organized, with enrollments in the ratio 2 to 1.

Assignments were kept identical in the two classes. The presentation by the teacher was largely lecture-board work and the methods used were the same for both classes. The pupils used scratch paper in lieu of board work and spent a large part of the class period of fifty minutes each day on drill and preparation work, which was checked and corrected in class. Home work of approximately thirty minutes per day was regularly assigned and checked. The checking was done in various ways, pupils checking their own work at times and exchanging papers at other times, the teacher checked one set of papers each week, and a substitute teacher-clerk allotted to the teacher for that purpose checked all other assignments and recorded the results. All tests were checked by the teacher.

Besides the regular text for the course, the teacher had available two complete sets of supplementary books. These supplementary books were used for drill and review purposes and for enriched assignments to pupils of superior attainment in algebra.

Findings and Conclusions

Data in tabular form are presented below which indicate the relative capacities and achievements of the two groups reported on in this study:[1]

DISTRIBUTION ACCORDING TO I.Q. OF PUPILS IN THE LARGE AND SMALL GROUPS

I.Q. Levels	*Large Group (Frequency)*	*Small Group (Frequency)*
140-150	2	1
130-139.9	4	2
120-129.9	12	5
110-119.9	14	9
100-109.9	20	8
90-99.9	2	1
80-89.9	1	2
Cases	55	28
Total Range	80-150	80-150
Modal Step	100-109.9	110-119.9
Median	113.2	113.3
Mean	114.8	113.6
S. D.	12.4	13.3
Per cent excelling median of other group	49.8	50.4

This table should be read as follows: In the large group there were two pupils with I. Q.'s within the range 140-150. One pupil in the small group had an I.Q. placement in this same level, etc.

The data of the above table show that both groups were composed largely of pupils of average and superior mental ability with but three cases in the total group which would be classed as of inferior mental ability. Two of these three cases were assigned to the smaller group. Forty-nine and eight-tenths per cent of the large group excelled the median of the small group, while 50.4 per cent of the small group excelled the median of the large. The mean of the large group was slightly higher than that of the small group and the spread of the middle 68 per cent of the large group was the less. However, the differences between the measures of central tendency and variability for the two groups were not statistically significant and may be neglected for practical purposes.

The data on intelligence quotients show that the groups are approximately normal in mental ability and that they are practically equal in mean ability and spread of ability. The findings of this study are therefore based on work done by two groups of pupils equal in mental ability, one group being nearly twice the size of the other.

[1] The statistical treatment of the data gathered in this study was suggested and directed by Dr. Frank C. Touton, University of Southern California.

The Prognosis Test. Data are given below which contrast the two groups on the basis of results shown in the Orleans prognosis test of ability in algebra. This test was given during the first week of the semester.

DISTRIBUTION ACCORDING TO RESULTS ON THE PROGNOSIS TEST OF PUPILS IN THE LARGE AND SMALL GROUPS

Score Levels	*Large Group (Frequency)*	*Small Group (Frequency)*
180-200	4	1
160-179.9	2	2
140-159.9	20	7
120-139.9	12	6
100-119.9	11	2
80-99.9	3	6
60-79.9	3	4
Cases	55	28
Total Range	60-200	60-200
Modal Step	140-159.9	140-159.9
Median	137.5	126.7
Mean	133.6	121.4
S. D.	28.7	34.1
Per cent excelling median of other group	61.8	38.4

This table should be read as follows: Four pupils in the large class made scores within the range 180 to 200 on the Prognosis test. One pupil scored within the same range in the small class, etc.

According to the results obtained from the prognosis test, the two groups were not so evenly balanced in terms of ability in algebra as was indicated by the I.Q. distribution, the larger group having a somewhat higher central tendency and less variability. The prognosis test results also indicated superior ability in the large group in that 61.8 per cent of the large group excelled the median of the small group. There were but 38.4 per cent of the small group excelling the median of the large group. A somewhat higher mean and also less spread in the central 68 per cent of the group was found in the larger group. Prediction of success in algebra apparently was in favor of the large group when prognosis test results were considered, even though data on intelligence scores showed the two groups to be essentially equal in ability and in spread of ability.

Quarterly Tests. Four tests were given at approximately five-week intervals during the semester. The tests used were copies of former city quarterly tests. On each test there was a possible score of twenty-five.

SCORES ON QUARTERLY TESTS

Quarterly Test	*Large Group* No. 1	*Small Group* No. 1	*Large Group* No. 2	*Small Group* No. 2	*Large Group* No. 3	*Small Group* No. 3	*Large Group* No. 4	*Small Group* No. 4
Score Levels				*Frequencies*				
21-25	13	4	20	6	13	7	15	4
17-20.9	23	12	16	7	18	6	12	11
13-16.9	11	5	12	11	16	4	16	7
9-12.9	8	4	4	2	4	8	6	5
5-8.9	—	2	3	2	4	3	5	—
1-4.9	—	1	—	—	—	—	1	—
Cases	55	28	55	28	55	28	55	27
Total Range	9-25	1-25	5-25	5-25	5-25	5-25	1-25	9-25
Modal Step	17-20.9	17-20.9	21-25	13-16.9	17-20.9	9-12.9	13-16.9	17-20.9
Median	18.9	17.7	19.1	16.6	18.9	16.9	16.9	17.4
Mean	17.6	15.9	18.0	16.5	16.9	15.5	16.3	16.6
S. D.	4.0	5.1	4.9	4.5	4.9	5.4	5.5	4.1
Per cents that excel medians of other group	58.2	36.8	67.6	33.3	57.1	36.2	46.9	56.2

The table should be read as follows: On test 1 in the large group 13 pupils placed in the score level 21-25. Four pupils of the small group placed in this same score level, etc.

The large group showed a higher median and higher mean score than the small group in the first three of these tests, though the differences in the means were not statistically significant. The mean of the large group fell slightly below the mean of the small group in the fourth test, the difference in means being negligible. A slight tendency to increase the spread of the central two-thirds of the large group was indicated in the scores on the quarterly tests during the term. This definite tendency was not noted in the small group. The observed differences in the means of the two groups seemed to indicate slightly superior accomplishment on the part of the large group. Computation of the reliability of these differences showed that the differences were less than necessary for statistical significance. This fact indicated that the two groups were relatively equal in accomplishment on the quarterly tests.

The City Semester Test. During the eighteenth week of the term a semester test was administered to the two classes. The test was compiled by the City Division of Psychology and Educational Research and was based on the text used in the class. Data secured from the results of this test are presented below.

DISTRIBUTION OF SCORES IN THE LARGE AND SMALL GROUPS BASED ON THE RESULTS OF THE CITY SEMESTER TEST

Score Level	*Large Group (Frequency)*	*Small Group (Frequency)*
40-45	6	2
35-39.9	6	4
30-34.9	13	6
25-29.9	13	3
20-24.9	10	5
15-19.9	4	2
10-14.9	3	5
5-9.9	—	1
0-4.9	—	—
Cases	55	28
Total Range	10-45	5-45
Modal Step	25-34.9	30-34.9
Median	29.0	26.9
Mean	28.5	25.6
S. D.	8.4	6.1
Per cent excelling median of other group	60.1	45.0

The table should be read as follows: In the City Semester test six members of the large group made a score in the level 40-45. Two members of the small group placed in this same level, etc.

The large group showed a higher median and mean score than the small group, though the differences were not statistically significant. The spread of the middle two-thirds of the large group on this test was greater than that spread for the small group. Of the large group 60.1 per cent excelled the median of the small group, while 45.0 per cent of the small group excelled the median of the large group. There was a slightly smaller total range of scores in the large class.

Results on the Standardized Test. At the beginning of the nineteenth week of the term the experimental and control classes in B9 Algebra were given the Columbia Research Bureau Algebra Test compiled by Orleans and Wood to test achievement in the first semester of algebra.

DISTRIBUTION OF SCORES IN THE LARGE AND SMALL GROUPS BASED ON THE RESULTS OF THE COLUMBIA RESEARCH BUREAU ALGEBRA TEST

Score Levels	*Large Group (Frequency)*	*Small Group (Frequency)*
51-55	1	0
46-50.9	4	3
41-45.9	8	3
36-40.9	8	3
31-35.9	9	6
26-30.9	9	5
21-25.9	8	1
16-20.9	7	4
11-15.9	0	2
6-10.9	0	1
1-5.9	0	0
Cases	54	28
Total Range	16-55	6-50
Modal Step	26-35.9	31-35.9
Median	32.7	31.9
Mean	32.4	30.5
S. D.	8.4	11.1
Per cent excelling median of other group	52.5	46.3

The table should be read as follows: On the Columbia Research Bureau Algebra test one member of the large group scored in the 51-55 level. No member of the small group scored in this same level, etc.

The large group showed a higher median and mean score and less variability than did the small group on the above data. The differences between the measures were not highly significant, though 52.5 per cent of the large group excelled the median score of the small group as against 46.3 per cent of the small group who excelled the median score of the large group. The variability of the central two-thirds of the large group was noticeably, though not markedly, lower than that of the corresponding section of the small group.

Correlations. The table below gives correlations for each group between the several measures obtained during the semester.

CORRELATIONS BETWEEN THE MEASURES OBTAINED IN THE LARGE AND SMALL GROUPS

	Large Group		*Small Group*	
	I.Q.	*Prognosis*	*I.Q.*	*Prognosis*
	P.E.	*P.E.*	*P.E.*	*P.E.*
First Quarterly Test	0.65±0.06	0.61±0.06	0.38±0.10	0.68±0.06
Second Quarterly Test	0.43±0.08	0.68±0.05	0.58±0.08	0.69±0.06
Third Quarterly Test	0.45±0.07	0.48±0.07	0.42±0.08	0.61±0.08
Fourth Quarterly Test	0.54±0.07	0.65±0.06	0.64±0.07	0.86±0.03
I. Q.	.....	0.57±0.06	.....	0.46±0.09
City Semester Test	0.60±0.06	0.70±0.05	0.49±0.09	0.76±0.05
Standardized Final Test	0.60±0.06	0.67±0.06	0.63±0.07	0.69±0.06

(Table continued on page 26)

	Standardized Test, Large Group	*Standardized Test, Small Group*
First Quarterly Test	0.70±0.05	0.64±0.07
City Semester Test	0.76±0.04	0.86±0.03

This table should be read as follows: The correlation coefficient between scores on the First Quarterly test and intelligence quotients of members of the large group was 0.65±0.06. For the small group the same comparison yielded a correlation of 0.38±0.10, etc.

The several items of the table show correlations between the intelligence quotients and all the test scores which were given during the term. They give correlations between the prognosis test and all later tests; also between the standardized final test and the first quarterly and city semester tests. The above correlations in the main indicate in general a superiority of the prognosis test results over the I.Q. records as a basis of prediction of achievement in the course. Comparison of I.Q. records with prognosis test scores shows a positive but not markedly significant relationship between these two measures. The correlations between the scores in the prognosis test and in the final city test and standardized test were high in both classes, being somewhat higher in the small group. The standardized final test showed high correlation with both the first quarterly test and the city semester test, the highest correlation existing between the standardized test and the city semester test scores in the small group.

Pupils' Reactions to the Experiment. The personal reactions of the group were obtained through answers to the following set of questions. The pupils were told that their names need not be put on the papers, as the answers would be taken by groups rather than individually. There were not more than half a dozen papers, however, which were not signed. In the judgment of the teacher the responses were honest and well considered. A few pupils did not answer all questions.

PERSONAL REACTIONS OF THE EIGHTY-THREE B9 ALGEBRA PUPILS UNDER CONSIDERATION TO THE LARGE AND SMALL GROUPS

1. Do you enjoy algebra as much as you expected?
   Answer: Large group—Yes, 46; No, 7. Small group—Yes, 26; No, 2.
2. Do you want to continue with second semester algebra?
   Answer: Large group—Yes, 53; No, 2. Small group—Yes, 24; No, 2.
3. Do you want to take any mathematics after algebra?
   Answer: Large group—Yes, 37; No, 17. Small group—Yes, 24; No, 4.
4. Have you done work which satisfies *you?*
   Answer: Large group—Yes, 40; No, 12; Qualified, 3. Small group—Yes, 9; No, 19.
5. Check those of the following which you feel you have mastered.

	Checked Answers	
	Large Group	*Small Group*
(a) Formula work	37	18
(b) Simple equations with transposing	51	25
(c) Fractional equations with l.c.d.	51	21
(d) Worded problems—simple headings	50	24
(e) Worded problems—double headings	44	15
(f) Checking answers	46	16
(g) Algebraic addition	47	20
(h) Algebraic subtraction	47	19
(i) Removing parentheses	51	17
(j) Multiplying by + or — terms	40	14

6. Which of the above topics do you wish us to review?
   Answer: Large group mentioned formula work most frequently. Small group mentioned formula work and removing parentheses.
7. Have the assignments been too long?
   Answer: Large group—Yes, 16; No, 39. Small group—Yes, 2; No, 26.
8. Have you tried to co-operate in every way possible?
   Answer: Large group—Yes, 53; No, 2. Small group—Yes, 20; No, 8.
9. Have you liked the group in which you have worked?
   Answer: Large group—Yes, 50; No, 5. Small group—Yes, 25; No, 3.
10. Would you like to continue in a similar group next term?
    Answer: Large group—Yes, 47; No, 8. Small group—Yes, 26; No, 1.
11. What topic have you liked best in this term's work?
    Answer: Large group—(d) and (b) above. Small group—(b) and (f).
12. Mention the special methods insisted upon which you think would be helpful in another class.
    Answer: Both classes mentioned the use of headings in worded problems.
13. What disagreeable or unsatisfactory conditions have existed which could have been avoided?
    Answer: Large group mentioned noise on girls' playground, chairs not satisfactory, lack of opportunity for individual attention. Small group made no definite comments.
14. What in general do you think of your group and its work?
    Answer: Large group—44 approved, 2 disapproved with no reason stated, 4 stated small class better for individual attention, 5 did not answer. Small group—10 approved wholly or partially, 18 disapproved of the conduct of certain members of the group and cite noisiness and lack of co-operation as the reason for their disapproval.

Throughout the semester the response of the large group was more satisfactory than that of the small group. The differences between the mean scores obtained in the several tests administered to the two groups during the semester were not statistically significant, yet the consistency with which the means of the large group excelled the means of the small group justifies the statement that results in the large class gave greater satisfaction to the teacher than did results in the small class.

In one sense the teacher felt that the large grouping contributed to the success of members of that group. To these pupils, working in a large group was a novel experience. The appeal of a situation wherein they were made members of an unusual group aroused in them an interest and desire for success.

The work habits, standards of conduct, and intellectual interests of the majority of the large class were, in the opinion of the teacher, superior to those of the small group and in large measure accounted for the slightly higher accomplishment scores of the large group. Should equality of distribution of these factors as well as of I.Q.'s have existed in the two groups, there is reason to believe that the results in the two classes would not have been so consistently in favor of the large group.

Summary. Two groups of beginning algebra pupils were established with one group approximately double the size of the other. The two groups were equally balanced according to the distribution of intelligence scores. Methods of instruction and assignments were kept as nearly identical as possible in the two classes. A prognosis test given at the beginning

of the term indicated that the large group held a slightly higher promise of success than did the smaller group.

The four quarterly tests given during the term in general yielded higher median and mean scores in the large group than in the small, though the differences were not statistically significant. A city semester test given at the end of the term showed a higher median and mean score in the large group. The small group on the city semester test showed a lower mean score and less spread from the central tendency. A standardized test given over the first semester's work gave a higher median and mean score and less variability in the large group than in the small. As usual, the variability within each group outweighed in importance the difference between the mean scores of the two groups.

Correlations between the various data revealed the prognosis test results to be superior to the intelligence quotient records as a basis of prediction of achievement in the course, though each measure has relatively high predictive value.

Personal reactions of the groups were obtained through a questionnaire, and in general the answers reported favorably for the large group. The novelty of working in a large group seemed to be a factor which tended to arouse the members to an unusual interest and desire for success in the class. Results of comparison of the statistical data showed the groups to be relatively equal in accomplishment at the end of the term as they were relatively equal in ability at the beginning of the term.

The study shows that for two particular class groups in Elementary Algebra comparable in ability and variability and taught by the same teacher using as nearly as possible identical methods and materials, the results achieved by the class group of fifty-five pupils equalled and slightly excelled the results for the class of twenty-eight pupils.

VISUAL SURVEY OF OAKDALE UNION HIGH SCHOOL

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IN September, 1930, the Division of Optometry of the University of California, with the co-operation of the Oakdale Union High School faculty, began a visual survey of the entire high school enrollment at Oakdale. The benefits to date have been so numerous and far reaching that the Oakdale Union High School hopes to continue this work. Recognition of service to society is the only reward that Professor Ralph A. Minor of the Division of Optometry at the university and his co-workers have received for their valuable contribution. The assumption of this survey by the university came as the result of Oakdale's application to Dr. T. A. Brombach, at that time Secretary of the State Board of Optometry, for guidance in conducting a visual survey in the high school. He referred this application to Professor Minor, with whom arrangements were made to supply the personnel and to transport the necessary equipment for the desired survey.

Students were notified one day before the tests were made that they would be subjected to the tests unless they or their parents objected. However, no written permits were sent home for the parents to sign. Eleven objectors reported on the first day of the examinations, but when they were informed that no drugs or drops would be placed in their eyes all but three desired to have their eyes tested on the second day of the examinations.

Promptly at the opening hour of school on the morning of September 11, Doctor T. A. Brombach, E. A. Coe, F. L. Mason, F. F. Neal, and A. R. Reinke, all of the Division of Optometry, arrived in Oakdale, bringing with them refractors, phorometers, ophthalmoscopes, self-luminous skiascopes, luminous test charts, color vision testing equipment and perimeters. The university personnel was joined by Dr. J. T. Hobson of Stockton, who had volunteered his assistance in completing the survey. With the co-operation of the high school faculty and students, the arrangement and installation of the apparatus was completed with little waste of time, and at 10 a. m. the first group of students appeared for the test.

Upon entering the gymnasium the student presented himself first at the registration desk, where he received a special record card upon which was transcribed from school files the name, class and age of the student. The student then proceeded to the section of ophthalmoscopy and color vision, where Dr. Hobson tested the quality of the student's color perception by Holmgren Worsteds and Ishihara's book and, in a number of selected cases, ascertained the state of health of the fundus. An attendant supplied by the school inscribed this record upon the student's card. Ad-

vancing to the section conducted by Dr. Coe, the student's eyes were tested for their acuity of vision by means of Snellen type, no exception being made in the acquisition of these data when correction lenses were worn. Here, as before, an attendant inscribed the record upon the student's card. Phoria tests followed, the state of alignment of the visual axes being determined by Dr. Reinke, who utilized the prism dissociation method in conjunction with targets upon the luminous test chart to make this determination. The final tests were carried out at the section of skiascopy, where Dr. Mason and Dr. Brombach, working independently, ascertained the state of refraction of the eyes of each student by the method of objective skiametry, modern refractors and self-luminous skiascopes being utilized to facilitate the measurements. The recording of these measurements upon the student's card was completed by an attendant who retained each card for the school files. A part of the survey not exacted of all pupils but conducted in the interest of those engaged in athletic activities constituted the charting of the indirect fields of color perception by use of the Merville perimeter. Dr. Neal carried out this portion of the survey with dispatch.

At the conclusion of the work of the first day the data acquired were subjected to analysis, and segregation was made of those students whose eyes merited a subjective measurement of the state of refraction. Upon the second day these students were recalled to the clinic and subjectively tested by Dr. Mason for the character and degree of the ametropia disclosed by skiametry on the preceding day, and by that means very definite information was arrived at upon which to base recommendations to be made to the school officials.

In the one and one-half days required more than four hundred students submitted to the survey—a survey which in point of comprehensiveness has seldom been conducted in any school and which was carried to completion in a period of approximately nine hours. It might be of interest to relate that all members of the faculty, janitors, and drivers of school buses were also subjected to the tests. No little local interest was aroused in Oakdale by the nature and thoroughness of the survey, and local physicians, the county superintendent of schools, neighboring school superintendents, officials of the local board of education, and members of the school faculty visited the gymnasium and requested information upon the significance and value of the tests conducted. Here they saw exposed a type of children who are not given to complaining but who are crippled so far as school progress is concerned. They saw, too, how the visual acuity of these individuals could be sharpened to unbelievable ratios. The visitors agreed that it was incumbent upon the schools to do more for the half-seeing world than has been done.

By one table of classification the eyes of the students were divided into four groups: the xxx group, or those that appeared to need immediate, urgent attention; the xx group, or those that needed attention but not urgently; the x group, or those showing slight error but no attention needed; and the n group, or those with normal vision. Of the total num-

ber examined, the xxx group (urgently in need of attention), contained 14 per cent; the xx group (attention advised), 25 per cent; the x group (slight error), 24 per cent; and the n group (no error), 36 per cent. Continuing the same percentage column we find among the total students examined defects classified as follows: pure hyperopes, 12 per cent; pure myopes, 4 per cent; hyperopic astigmatism, 29 per cent; myopic astigmatism, 13 per cent; esophoric eyes, 18 per cent; exophoric eyes, 20 per cent; hyperphoric eyes, 3 per cent; esophoria combined with hyperphoria, 3 per cent; and exophoria combined with hyperphoria, 3 per cent. Number wearing glasses, 8.9 per cent; number not wearing glasses, 91.1 per cent; strabismus, .8 per cent; monocular vision (amblyopia), 1 per cent; number color blind, 3.9 per cent; iris blue, 60 per cent; iris brown, 40 per cent; number of males, 56 per cent; and number of females, 44 per cent. A very remarkable finding during this survey was the fact that no pathological condition was found to exist; that is, although there was one case of congenital cataract and one of monocular diplopia, there was no conjunctivitis, iritis, retinitis, etc. This is, indeed, a credit to the home life of the students as well as to the sanitary condition of the school.

All students and parents of students whose eyes had been placed in xxx group and xx group were notified in writing. They were urged to obtain any corrections needed. Lists of eye specialists residing near Oakdale who were prepared to make such adjustments were furnished by the high school to students and parents. The advisers of the Oakdale Union High School faculty urged immediate adjustments of all students of xxx group. The response by March 1, 1931, proved to be 100 per cent, although an immediate full correction of the visual acuity in most cases was either impossible or impractical. The students of the xxx group (fifty-four in number) were much more heterogeneous than the average high school group. Their chronological ages represented a greater spread; several students were more than twenty-one years of age. Their I.Q. was normal, but they were usually more retarded. In this group each student, because of some peculiarity, such as disposition, frequency of headaches, anemia, or home conditions, represented a problem. The case history of each student in this group was investigated. The symptoms of each must be studied, and many re-examinations will be necessary. Hyperopic astigmatism, causing blurred vision, proved to be the outstanding defect; this defect was found to exist in 29 per cent of all the students, while only 4 per cent showed myopia, or short sightedness.

The defects were more prevalent among children of foreign parentage.
The defects were more prevalent among children of poor families.
The defects were more prevalent among children run down physically.
The defects were more prevalent among females than among males.
The defects were more prevalent among children with blue iris eyes than children with brown iris eyes. In both instances (blue or brown iris) the females outnumbered the males for "attention needed," in spite of the fact that the enrollment showed 56 per cent males and 44 per cent females.

Even though defective vision is a potent factor of retardation and elimination, it is interesting to note that the defects varied directly as the

scholastic age of the students. The defects prevailed most of all among students who had had the usual children's diseases. (Perhaps their parents had permitted them to use their eyes before complete recovery from these children's diseases.) For the most part defective eyes, unlike low intelligence, are not hereditary; they are most often produced. The data collected at Oakdale indicate that visual efficiency is generally lowered by disease, abuse, or improper care of the eyes, and that, if the eyes are neglected the tendency to visual defects increases as the individual becomes older.

Fifteen cases, fourteen boys and one girl, of red-green color blindness were found. Most of this group were unaware of their defects other than the fact, as they expressed it, "I do not know colors very well." In making the test for color blindness the Ishihara book was used, and a second check-up was made, using Holmgren Worsteds, upon the students selected as color-blind by the first test. Since color blindness is thought to be hereditary and, for the most part, incurable, the discovery of the defects of color discrimination at this age may change the student's choice of subjects in school and his vocation without loss of time or waste of effort. This type of the survey work goes hand in hand with vocational guidance. It is obvious that many callings are, or should be, closed to the color blind; as railroading, marine and naval service, chemical analysis, painting and minerology, the handling of drygoods, millinery, etc.

Using English as a basis, data had been collected at Oakdale to show the effect of correcting visual acuity upon scholastic progress. Sixty-two pairs of glasses were procured as the result of this survey. All students of xxx group who remained in school until March 1, 1931 had glasses. The average grade given by the instructors of English to students of the n, x, and xx groups was 83 per cent throughout the school year. Students whose eyes placed them in xxx group received an average grade of 79.3 per cent before they procured glasses and 81.8 per cent thereafter. Evidently the furnishing of glasses to a slow group of students is not the panacea for all scholastic failures, since, as stated before, the xxx group is heterogeneous. Upon receiving glasses nineteen students improved their grade in English 10 per cent or more. Ten students who were expected to fail in all of their school work for the year were able to receive a passing grade as the result of their improved visual acuity. The California Tax Payers Association has reported that it costs $220 per year to educate or re-educate a student in a California high school. According to these figures, this survey, outside of the comfort and value to the children, was worth $2,220.00 to the Oakdale Union High School district in this one instance.

During the school year 1930-1931, Dr. Coe and Dr. Mason, as the representatives of the Division of Optometry, made visits to Oakdale to advise with the faculty relative to urgent eye adjustment needed. The survey was the first of its kind to be undertaken by the personnel of the Optometry Division of the University of California. It was undertaken not alone in recognition of the university's obligation to society but also

to demonstrate the existence of faulty eye performance among students of high school rank, and the influence which it may exert upon scholastic progress. This survey has awakened an interest in eye sight conservation at the Oakdale Union High School and throughout the district. Since it is apparent that seeing results from the co-working of light and vision, the high school plant has been corrected in many ways. Glares from glossy surfaces, torn window shades, dirty windows, dull interior colors, and poor blackboards are some of the physical properties of the plant that were corrected. Apparatus, books, supplementary reading materials, chalk, typewriter ribbons, papers, and all material in use were scored by the same standard, resulting in many articles being replaced. As an illustration, Oakdale will use for ordinary class work no lead pencils harder than a number 2, and where the visual acuity is somewhat dull pencils of number 1 grade (a very soft pencil), will be used.

The immediate benefits of this clinic are obvious. Interest has grown closer between the school and the homes relative to habits of study, general fatigue, physical disorder, inability to concentrate, irritability, poor work, accidents, inefficiency, good posture, and eye strain. In short, Oakdale has made an attempt to widen the doorway of vision, through which most education is acquired.

THE CUBBERLEY CLUB

It is reported that Dr. Ellwood P. Cubberley, Dean of the School of Education at Stanford University, will retire from professional life in two years. William McAndrew, in *School and Society,* August 1, thus comments on this report:

"Think of Socrates or Franklin or Gladstone retiring at sixty-five! Cubberley may change his work but he won't retreat from it. He's too young to quit and too old to get the loafing habit.

"Nevertheless three different groups, east and west, are planning a memorial. They are combining into a national body with Henry Suzzallo as chairman. An Ellwood Cubberley Institute of Educational Research, a Cubberley Hall to house the Stanford School of Education, a Cubberley celebration in 1933, a Cubberley volume of letters by those who realize their debt to him, a Cubberley endowment for lectures, a Cubberley portrait, a biography, are projects already under way. My guess is that as soon as the intent of the initiators is known a multitude of good people will want to be let into the commemoration. It affords a focus for a constantly brightening professional pride. Satisfaction at being in a high-grade public service was never so keen among teachers as now. Never were there so many and well-reasoned declarations by public-minded Americans upon the reliance that must be placed upon our schools. The memorials in foreign lands, marking the service of other than military leaders, invariably impress the thoughtful travelers as a contrast to our custom at home. The time is ripe for reminding ourselves of what education means to America and for putting personality into our commemoration of the nation's pattern set for educating the people. The starters of this move could not have chosen a better leader of progress than this scholar, planner, and executive. It is in order, now, to write G. Gilbert Wrenn, at Stanford University, your request to be enrolled in the Cubberley Club."

AN EVALUATION OF THE PRACTICE OF CLASSIFYING HIGH SCHOOL GRADUATES INTO SEPARATE RECOMMENDED AND NON-RECOMMENDED GROUPINGS

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FOR many years it has been the practice of the University of California and most privately endowed institutions of higher learning in the State of California to admit as freshmen only such students as are designated as recommended—a group which in most high schools comprises not more than twenty-five to fifty per cent of the graduating classes. The majority of the higher institutions of California have allowed the decision as to who should be recommended to remain with the secondary school principal. The University of California has followed the policy of accepting any high school graduate whom the principal was willing to recommend. This number, however, has been rendered steadily smaller from year to year by two very powerful influences: first, the fact that the principal was sending his students to compete in the university, often unsuccessfully, with recommended graduates of other high schools; and, secondly, the fact that his school was being rated at each of the several universities on the records of his students at these institutions. This rating was not based on the number of successes or failures from his high school, but upon the percentage of his students ranking in the highest two-thirds of the freshman class. In other words, if a school had its proper share in the highest two-thirds of the class it would have sixty-six and two-thirds per cent of its entering freshmen at the university so classified, while thirty-three and one-third per cent would be rated in the lowest third of the freshman class. If it had less than two-thirds of its representation at the university in the highest two-thirds of the class, and if the condition should continue for several years, the school would be given a "B," or second-class rating among the high schools of the State. The effect of this rating often led to a loss of the school's reputation in the community and sometimes jeopardized the career of the principal as an educator.

The resultant of two such powerful forces as those described above would not be difficult to determine. Principals, out of sheer self-protection both to themselves and their institutions, have steadily curtailed the number of their recommendations to the university until, in the Pasadena High School, which may be accepted as typical in this respect, the number qualifying on the Principal's Form A recommendation—the conditions for entrance to the freshman class of the University of California—did not rise above thirty per cent.

The effect of the recommendation practice described above has been to divide all California high school graduates into two general divisions, (a) the recommended, and (b) the non-recommended. The significance of this classification would be hard to exaggerate. Those who achieved high school recommendation were popularly regarded as successful; those who fell short were considered to have had their chance and failed. The recommended group were deemed to be proper material for the professions; the non-recommended group were consigned to a life of unskilled or possibly skilled labor. The recommended group were judged to be worthy of further education; the non-recommended group were considered to have advanced as far as their capacities would permit. The recommended group found the doors of the colleges were flung wide open; but a majority of the non-recommended group in their quest for further education in standard colleges and universities found themselves everywhere confronted with a closed door.

Certificate and Diploma Groups. When in 1917 the junior colleges were organized and given legal status by legislative enactment, they were required by law to accept students of both recommended and non-recommended groups. The junior colleges, however, influenced by the practices of the standard colleges and universities, particularly the University of California, to which they looked for guidance, and actuated by a fear lest their courses would not be interpreted in their respective communities as being of a college grade, very quickly adopted the policy of separating their recommended and non-recommended students into two distinct classifications, which they labeled "Certificate" and "Diploma" groups, respectively, so-called because the Certificate group received on graduation, in addition to the diploma, the junior certificate which in general carried with it a recommendation for junior standing in standard colleges and universities, whereas the Diploma group received the diploma only with no recommendation for advanced standing. The two groups in the larger junior colleges were separated for class work, and a very sharp social as well as academic distinction sprang up between them. To the credit of the junior colleges, however, it should be stated that a universal practice developed to transfer from the Diploma to the Certificate curriculum such students as had, according to definite standards more or less arbitrarily set up, demonstrated their ability to do college work successfully. However, in the Pasadena Junior College at least, a relatively small percentage ever transferred, and it is not likely that the percentage was large in any such institution.

To state that a particular high school graduate who has the means and an ambition to go to college is unfit for further education carries with it the assumption of a staggering responsibility. The principal who wields this tremendous power holds in his hands the destiny of human life. Certainly no one should make such a momentous decision without a clear perception of the resulting consequences to students and without knowledge gained from a scientific study of students' records.

Comparison of Recommended and Non-Recommended Groups. In order to evaluate this practice of classifying high school graduates into separate recommended and non-recommended groupings the writer made a comparison of a large number of representative high school graduates with a similar group of non-recommended high school graduates to ascertain their points of similarity and dissimilarity with the aim of discovering if possible why the doors of educational opportunity should be opened to the one and closed to the other. The comparisons were made on the following bases:

1. The social backgrounds selected from the application blanks for entrance to the Pasadena Junior College.
2. The economic background and vocational interests taken from the application blanks and from the data recorded on the Miner blanks for the analysis of work interests.[1]
3. The high school records taken from cumulative record cards on file in the Recorder's office.
4. The junior college academic records also taken from the cumulative record cards on file in the Recorder's office.
5. Scores of a battery of standardized educational and psychological tests.
6. Trait ratings on the Hughes Rating Scale; ratings made by students, parents and teachers.[2]
7. A comparison of the non-recommended group transfers with the recommended and non-recommended groups.
8. A study of the test scores of the marginal group consisting of those students having twelve or more but less than fifteen recommending units.
9. A comparative study of recommended and non-recommended group students as classified on the basis of the plan for admission to the University of California to take effect August, 1931.

The limitations of space will not permit the insertion in this article of the statistical data derived from the comparisons or of a detailed statement of the findings. The study in full, comprising a three hundred and eighty-five page volume, may be found in a hitherto unpublished doctor's dissertation in the library of the University of Southern California. In the paragraphs which follow, however, an effort will be made to outline some of the larger and more significant findings of the study.

Summary of the Important Findings

1. *Certain group tendencies may be discovered in a comparison of the recommended and non-recommended students, but these tendencies are not even partially characteristic of all the members of the respective groups. As a group* the recommended students are superior to the non-recommended and the marginal students are very slightly superior to the non-recommended group as a whole. The recommended group as classified under the new plan announced by the University of California to take effect in August, 1931, is superior *as a class* to the recommended group as classified

[1] Miner, J. B., "Analysis of Work Interests" (Revised Edition). Distributed by C. H. Stoelting Company, Chicago, Illinois.

[2] Hughes, W. Hardin, Graphic Rating Card. Distributed through the Department of Research, Pasadena City Schools, Pasadena, California.

under the old plan. Under either plan of classification there is a *tendency* for recommended students to be academic, introvertive and studious, whereas there exists in the non-recommended group a *tendency* toward activity, strong physical vitality, extrovertive character, and mechanical ability. With respect to all these characteristics, however, the groups merge into each other so gradually and imperceptibly that no hard and fast boundary line can be drawn between them. From every point of view taken in the study there are large numbers of non-recommended students who equal and exceed the median of the recommended group and, conversely, large numbers of recommended students who fall below the median of the non-recommended group. On the basis of such general and ill-defined tendencies no policy of exclusion from further educational opportunities can with justice be applied to all members of the non-recommended group.

2. *The most pronounced deficiency of the non-recommended group as a class is the lack of mathematical and linguistic accomplishment.* This deficiency appears both in the high school and college records. Relatively few, even of the recommended group, display marked mathematical ability. In general it may be said that most high school graduates of either group take as little mathematics as possible. In linguistic ability, however, the two groups are more widely divergent. This difference appears in the Subject A examination in English Composition, the vocabulary tests, the reading tests and the academic records of the students. If students could be given a better foundation in these basic tool subjects in the elementary and lower secondary grades a larger number of failures on the upper secondary school level might be forestalled.

Another important problem which this situation presents is the extent to which language and mathematics, and in fact the entire academic core as prescribed in the new entrance plan of the University of California, constitute a *sine qua non* for success in higher institutions of learning. If language and mathematics in particular are essential for successful careers in the university then it must be admitted that large numbers of non-recommended students are rightly denied the privilege of university matriculation; if they are not, the data of the foregoing study would not seem to justify a policy for the non-recommended group radically different from that of the recommended.

3. *Neither the old plan used by the principals nor the new plan announced by the University of California will classify, without injustice to large numbers of students, high school graduates into recommended and non-recommended groups.* No blanket plan has yet been used in California which can be applied to all high school graduates. If a student is of college calibre and has not taken all the mathematics prescribed in the new plan of the university, why should he not be permitted to proceed and make up his deficiencies during his lower division course in college? The extensive overlapping described under "1." above makes it impossible to separate students into recommended and non-recommended groups by

hard and fast boundary lines without inflicting injustice on large numbers of students. The unanswerable argument on this point is the large number of non-recommended students who actually succeed in the recommended course when once given a chance.

In this connection it might be well to consider two arguments advanced by the proponents of recommended and non-recommended classification as proof that no injustice is involved in its administration. First, it has been argued that to permit unrecommended high school graduates to enroll in the university or the recommended course of the junior college would be to encourage them in dishonest conduct by permitting them to repudiate their "academic debts." In other words, a student who is short any portion of his fifteen recommending credits is to that extent a debtor, to whom, however, the writer has never been able to discover from their arguments. The fallacy of this argument is too apparent to deserve serious consideration. It rests on the entirely disproved assumption that fifteen recommending credits are the inescapable prerequisites for college success. Moreover, in what sense could a grade below eighty be conceived of as a debt? The essential question is, can the student carry on in his advanced courses, and if so, it may be answered, he is, in America at least, indebted to no one for the opportunity of doing so.

Secondly, the argument has been advanced by university entrance officials that there can be no injustice involved as long as the university is willing to admit such as are able to pass the examination of the college entrance board. If the non-recommended student who is denied admission on his record desires to matriculate in the university let him pass these examinations and he will be welcomed to unconditional standing as a college student. It must be conceded that, on the face of it, this argument contains much plausibility. It rests, however, on the assumption that the standards set for recommendation are such as will provide admission to college for all those students who, to a degree of probability almost approaching certainty, will succeed in college, and will exclude from college those students who to the same degree of probability will fail, and only those. No one can examine the data of the foregoing study and others dealing with the problem without realizing that this is a false assumption. Says Doctor Walter Crosby Eells in his report on the California Junior College Mental-Educational survey:

> More emphatic evidence could scarcely be asked that the distinction between the Certificate (recommended) and Diploma (non-recommended) classification is inadequate and unfair as applied to a large percentage of individual students. This basis of classification is therefore invalid, both as a standard for university admission and as a criterion for the classification of students within the junior colleges.[3]

The comparisons made in the foregoing study would indicate that recommended and non-recommended *types* are non-existent. The two groups do not differ in social or economic backgrounds. They share the same ambitions and are actuated by the same motives. High school and

[3] Eells, Dr. W. C., "California Junior College Mental-Educational Survey," Bulletin No. J-3, State Department of Education, Division of Research and Statistics, p. 23.

college academic records show only general tendencies, and these only in the fields of mathematics and language. The ratings and test data so overlap between the two groups that as a criterion for classification they would not divide the student body into anything resembling the recommended and non-recommended categories. If the groups are made homogeneous from one point of view, they are heterogeneous from another, equally important as a criterion for successful scholarship. It would seem from all available facts that adolescent human nature cannot be pigeonholed into any two large, distinct and well-defined groups, and that the recommended and non-recommended classification of high school graduates is indefensible from a scientific point of view.

4. *The non-recommended students who have been transferred to the recommended course and who carry on with reasonable success as recommended students do not differ in any important standard of comparison with the rank and file of non-recommended students.* Students were transferred from the non-recommended to the recommended groups with the most flexible and unstandardized methods of procedure. These students are not appreciably different from the rank and file of the non-recommended students. The success of these students in the recommended courses would indicate that large numbers of other non-recommended students would do equally well if they had the opportunity.

5. *The policy of classifying high school graduates on the basis of general blanket standards into recommended and non-recommended groups results in the loss of the individual student in the crowd.* Perhaps one of the severest indictments of modern mass education is the focusing of attention on large groups rather than on individuals. We are interested in *classes, groups* and *student bodies,* but we have little time for the individual student.

Educators, however, must and need not forget the individual even in wholesale, public mass education. While we recognize the fact that the individual must realize himself as a member of society, the inescapable fact is that he himself is the original and the great "I am," and society is the product of his genius. While, up to a certain point, man must sacrifice himself for the welfare of the society he has created, no form of society can be justified which denies, over a long period of time, the maximum personal development to the humblest of its individual members.

6. *If the classification of high school graduates into groups which involve the granting and withholding of opportunities is to be justified at all it should be on the basis of particular subjects rather than a blanket regulation covering the entire curriculum.* This would involve a classification of subjects rather than students. In other words, each subject would have its specific prerequisites either in terms of subjects or quality of previous work, or both. Under such a policy a student might be in the upper level in one course and in the lower level in another. He would then be permitted to take advanced work in such subjects as those for which he had demonstrated an ability and for which he had taken the

necessary subject prerequisites. In case he chose other courses they would be on the lower level, and degree credit could be contingent on superior attainments in the course. The point made in this paragraph rests on the assumption that the only valid prerequisites for the pursuance of any college course are those which are imposed by the course itself, and that limitations upon advanced study should not be imposed by the arbitrary dictum of other individuals, howsoever well trained and experienced.

The problem of providing educational opportunity commensurate with the abilities of the student would thus ultimately solve itself because after the student had met the broad general requirements of the junior certificate he would almost invariably limit his elections to those of his special interests and aptitudes in which even the non-recommended student might be expected to demonstrate a satisfactory degree of collegiate scholarship. At any rate, it will be conceded that the fact that a high school graduate cannot pursue all the subjects of the college curriculum with a reasonable chance for success is no reason for withholding opportunities in those subjects in which he has demonstrated collegiate ability.

Problems for further study:

1. To what extent does the academic core as laid down by the university constitute a *sine qua non* for a successful college record?
2. Could language and mathematics be eliminated from the requirements without handicapping the student in his college career?
3. Should one who has completed any given unit of the public school system be given an opportunity in the next higher unit regardless of marks and subjects?
4. Should the entrance requirements for further study in the university be imposed by artificial standards set up by external authority or by the subjects which the student himself desires to take at the university?
5. To what extent should we discourage students of low ability and poor records from college entrance?
6. How may a greater amount of mathematical and linguistic training be provided for the weaker students in the elementary school and the junior high school?
7. Is it possible to develop a blanket plan of recommendation to college that will admit all who can succeed and eliminate those who are certain to fail, and only such?
8. Is the policy of entrance to college on a recommended basis consistent with a sound philosophy of education in a democracy?
9. What is the responsibility of the junior college with respect to both types of students?

THE ACHIEVEMENT OF THE PUBLIC JUNIOR COLLEGES OF CALIFORNIA

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THE junior college movement in California has this year reached its majority, for twenty-one years have elapsed since Mr. A. C. Olney organized the Fresno Junior College. It is generally recognized today that the junior college has become, in the words of "Father" Lange, "the capstone of our public educational system." There is still doubt in the minds of some as to whether or not the State, the counties, and the districts are justified in being taxed for junior college purposes. This doubt vanishes when facts of the achievement records of the California public junior colleges become known. It is the purpose of this article to set forth a few of the many records of achievement of this lusty twenty-one-year-old institution.

An effort was begun in September 1930 to collect from the various junior colleges certain facts regarding those students who had been enrolled in junior colleges during the past. An acknowledgment is hereby made to the junior college executives for their courtesy in gathering materials from their records and from their students. The facts thus gathered are helpful in aiding the public to understand what services the junior colleges are rendering the State and society.

Among the questions submitted to the junior colleges are the following:

1. *Number of graduates from 1921 to 1930.*
   Ten junior colleges graduated 2,444 students.
2. *Number of students enrolled for one semester or more who did not graduate.*
   Eight junior colleges enrolled 6,398 such students. These same junior colleges graduated 1,954 students. In these eight junior colleges only 23.4 per cent of those students enrolled for a semester or more have graduated.
3. *Number of graduates who were fully recommended to the University of California at the time of their entrance into the junior college.*
   Eight institutions which reported 1,599 graduates also reported that only 569 of these were fully recommended to the University of California at the time of their entrance to the junior college. It is a significant fact that 35.6 per cent of the junior college graduates were regarded as being fully "recommended" students. Approximately two out of three of the junior college graduates apparently would not have qualified for entrance to the University of California at the time of their entrance into the junior colleges. A later study of individual cases confirms this statement. However, seven junior colleges reporting 1,351 graduates stated that 789 or 58.4 per cent were not fully recommended at the time of their entrance into junior college.

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4. *Number of graduates who entered higher institutions.*

   Ten junior colleges reported that 1,208 of their graduates had entered higher institutions.

5. *Number of junior college graduates who have since graduated from college or university.*

   Eight junior colleges reported that 601 of their graduates have since graduated from higher institutions. When it is considered that hundreds more of their graduates are still in four-year colleges and universities, the public can well understand how well the junior colleges are doing their academic work.

6. *Number of non-junior college graduates who have since entered higher institutions.*

   Seven junior colleges reported that 723 of their non-graduates had continued in higher institutions. A very much larger per cent of graduates continue their higher education than do non-graduates. This fact justifies the junior colleges in their development of strong technical and semi-professional curricula.

7. *Number of junior college students who transferred to higher institutions before graduating from junior college who have since graduated from "senior" college.*

   Five junior colleges reported that only 211 of their non-graduates have since graduated from college.

8. *Number of junior college graduates who were "salvaged" by your junior college for success in higher institutions.*

   Six institutions reported that 25 per cent of their graduates had been "salvaged."

9. *Number of junior college students who did not graduate and who were "salvaged" for success in higher institutions.*

   Five junior colleges reported that they had "salvaged" for college work 292 of their non-recommended students.

10. *Number of junior college students who have graduated from terminal or occupational courses.*

    Only four junior colleges reported 312 students graduating from such courses. As this number represents 23 per cent of their entire number of graduates, it is certain that a few junior colleges are preparing adequately for occupational life.

11. *Number of junior college students who have taken less than two years of training in occupational courses.*

    Six junior colleges reported 1,053 such students. This fact is significant, for several junior colleges have developed curricula that have been designed to train students for positions; these curricula usually require less than two years of attendance of a junior college.

12. *Number of junior college graduates that entered occupational life immediately after graduation from the junior college.*

    Only three junior colleges reported 196 of their graduates as having entered into their life work immediately after graduation. However, this number represented 29 per cent of the number of graduates from these institutions.

13. *List the occupations the junior college students have entered since leaving your junior college (this will include all students you can trace, even though they have since graduated from higher institutions).*

    Only eight junior colleges replied, but the returns from these point clearly to *the real glory of the junior colleges.* Table I presents the story of the students of eight public junior colleges. The report of these 1,897 students clearly shows that the public junior colleges of California are successful in realizing the objectives of junior college education in California; Tables II to XII set forth the same fact. These objectives are:

    1. Guidance. *2. Training.* *3. Mastery.* *4. Citizenship.*

TABLE I.

OCCUPATIONS OF 1,897 STUDENTS TRAINED VIA THE JUNIOR COLLEGE ROUTE IN EIGHT PUBLIC JUNIOR COLLEGES

Occupation	*Number J. C. Transfers in Study*	*Occupation*	*Number J. C. Transfers in Study*
Teaching	377	Nursing	29
Clerical	287	Building Trades	19
Business, other than clerical	302	Auto Mechanics	18
Home-making	196	Medicine	18
Agriculture	134	Managerial	17
Common Labor	81	Law	12
Engineering	52	Ministry	10
Industry	52	Miscellaneous	258[1]
Government Service	35		

[1] Including: Library work 11, Art and Music 10, Chemistry 6, Dentistry 5, Journalism 5, Pharmacy 3, Aeronautics 2, Mechanics 24.

Being unable through the questionnaire method to secure the necessary facts regarding the status of junior college students in higher institutions, an effort was made to gather the information from the colleges and universities. Through the courtesy of several men[2] a vast amount of information has been gathered and presented in Tables II to XII. There is attempted in these tables to present a picture of the California public junior college product as he appears in the higher institutions. The writer holds in his possession the names and the first semester records of 4,323 junior college transfers who have gone to the higher institutions via the junior college route. These tables present no comparisons with the "native" students; those interested may find material for comparisons, but it is not the purpose of this study to determine whether or not the junior college transfers have done as well as have the native students. There is one fact that stands clearly forth: *The record of the California public junior colleges is one of outstanding achievement.* May not citizens, taxpayers, educators, and legislators alike feel that future constructive legislation should be encouraged?

The following tables answer conclusively a number of questions that have been asked by persons wishing to get at the facts about California's public junior colleges. A few questions are considered and their answers given.

[2] The co-operation of the following men is greatly appreciated: Mr. T. B. Steel, Recorder of the Faculties, University of California, Berkeley. Dr. C. H. Robison, University Examiner, University of California at Los Angeles. Dr. C. T. Fitts, Chairman of the Committee on Admissions, Pomona College. Dr. William Proctor, Professor of Education, Stanford University. President Duke, Redlands University. Mr. Theron Clark, Registrar. University of Southern California.

ACHIEVEMENT RECORD OF THE CALIFORNIA PUBLIC JUNIOR COLLEGES

TABLE II.

THE FIRST SEMESTER RECORDS OF 4,323 STUDENTS OF THE CALIFORNIA PUBLIC JUNIOR COLLEGES IN SIX HIGHER INSTITUTIONS

Name of Institution	Number of Colleges	Number of Students	Number Hours "A" Grades 1st Semester	Number Hours "B" Grades 1st Semester	Number Hours "C" Grades 1st Semester	Number Hours "D" Grades 1st Semester	Number Hours "E" Grades 1st Semester	Number Hours "F" Grades 1st Semester
U. C. Berkeley	29	2123	2132	8023	13,619.5	4326	1008	795.5
U. C. L. A.	30	857	476	2793.5	6410.5	1435	208.5	333.5
Stanford U.	30	700	1217.5	3579	3760	1145	42	380.5
Pomona College	25	414	889	3176.6	2054.6	412.5	156.5	26
Redlands U.	16	87	131.5	601.5	383	87.5	7	47
U. S. C.	2	142	255	656	855	229	44	68
Total		4323	5101	18,830 1/6	27,083 1/6	7635.5	1466	1650.5
Per cent of the whole of each type of grade			8.2+	30.4+	43.8+	12.3+	2.4—	2.7—

Total hours—61,766 1/3.

Combined grade point ratio—1.24.

TABLE III.

DEPARTMENTAL JUNIOR COLLEGES BY YEARS COMBINED AT THE UNIVERSITY OF CALIFORNIA AT BERKELEY

Years	Number of Colleges	Number of Students	Number Hours "A" Grades 1st Semester	Number Hours "B" Grades 1st Semester	Number Hours "C" Grades 1st Semester	Number Hours "D" Grades 1st Semester	Number Hours "E" Grades 1st Semester	Number Hours "F" Grades 1st Semester	Withdrew	Probation	Disqualified	Grade Point Ratio
1919	4	43	142.5	279	189	.....	8.5	8	3	.....	.....	1.85
1920	4	28	88.5	190	132	.....	37	3	.....	.....	.....	1.64
1921	3	10	22	64.5	38	16.5	.....	8	.....	.....	.....	1.51
1922	4	10	29.5	55	39.5	11	12	6	.....	.....	.....	1.44
1923	3	19	21	100.5	106.5	56	10	5	.....	.....	.....	1.22
1924	5	23	25	93	131.5	83.5	8	2	.....	.....	.....	1.11
1925	6	16	23	66.5	69.5	37	14	9.5	1	.....	1	1.13
1926	6	24	32.5	115.5	322.5	53.5	8	14.5	.....	.....	.....	1.15
1927	10	27	23.5	100	183.5	52	3.5	7	2	.....	.....	1.20
1928	7	20	26	87.5	132.5	31	3	6	.....	.....	.....	1.32
1929	6	16	16	67.5	103	25	4	15	2	.....	1	1.16
1930	14	81	45	192	560	183	46	39.5	6	.....	.....	.93

TABLE IV.

DISTRICT JUNIOR COLLEGES BY YEARS COMBINED AT THE UNIVERSITY OF CALIFORNIA AT BERKELEY

Years	*Number of Colleges*	*Number of Students*	*Number Hours "A" Grades 1st Semester*	*Number Hours "B" Grades 1st Semester*	*Number Hours "C" Grades 1st Semester*	*Number Hours "D" Grades 1st Semester*	*Number Hours "E" Grades 1st Semester*	*Number Hours "F" Grades 1st Semester*	*Withdrew*	*Probation*	*Disqualified*	*Grade Point Ratio*
1919....	6	21	61	133	88	.....	.....	.....	3	.....	.....	1.90
1920....	6	37	65	269.5	192.5	.....	19.5	14.5	1	.....	.....	1.59
1921....	6	31	40.5	154.5	146.5	49	27.5	16	.....	.....	2	1.23
1922....	6	37	50.5	178	200.5	39	25	11	3	.....	.....	1.33
1923....	7	57	57.5	226.5	377.5	119	29	24	.....	.....	2	1.14
1924....	8	67	70.5	261	420.5	173	39.5	18	4	.....	3	1.12
1925....	7	103	132.5	415.5	656.5	199.5	46	435	4	.....	1	1.20
1926....	9	153	173.5	576	915.5	352	79	53	7	.....	3	1.14
1927....	10	192	187	695	1183.5	385	89	78.5	8	2	1	1.37
1928....	12	273	215.5	932	1728.5	623.5	163.5	142	7	.....	9	1.03
1929....	13	363	287.5	1167.5	2462	771.5	141	120	14	3	4	1.11
1930....	15	482	296.5	1499.5	3238.5	1066	195	156	20	.....	5	1.05

TABLE V.

DEPARTMENTAL JUNIOR COLLEGES BY YEARS COMBINED AT THE UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Years	*Number of Colleges*	*Number of Students*	*Number Hours "A" Grades 1st Semester*	*Number Hours "B" Grades 1st Semester*	*Number Hours "C" Grades 1st Semester*	*Number Hours "D" Grades 1st Semester*	*Number Hours "E" Grades 1st Semester*	*Number Hours "F" Grades 1st Semester*	*Withdrew*	*Probation*	*Disqualified*	*Grade Point Ratio*
1923.....	5	12	15	42.5	78	9	3	2	1	.....	.....	1.36
1924.....	4	6	.....	13	31	9	.....	5	.....	.....	1	.89
1925.....	7	25	17.5	84.5	225	45	.....	3	.....	.....	.....	1.18
1926.....	8	29	19	54	204	78	5	19	5	1	1	.91
1927.....	8	26	9.5	61	214.5	67	12	16	1	.....	.....	.89
1928.....	12	32	5.5	90	254	59	5	36	.....	1	2	.91
1929.....	9	36	6.5	85.5	272	66	7	6	4	1	1	1.01
Totals.....		166	73	430.5	1,278.5	333	32	87				1.00

Total grades—2,234

TABLE VI.

DISTRICT JUNIOR COLLEGES BY YEARS COMBINED AT THE UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Years	*Number of Colleges*	*Number of Students*	*Number Hours "A" Grades 1st Semester*	*Number Hours "B" Grades 1st Semester*	*Number Hours "C" Grades 1st Semester*	*Number Hours "D" Grades 1st Semester*	*Number Hours "E" Grades 1st Semester*	*Number Hours "F" Grades 1st Semester*	*Withdrew*	*Probation*	*Disqualified*	*Grade Point Ratio*
1922	2	2	.....	5.5	21.5	6	.....	.....	.....	.....	.....	.98
1923	4	27	27	93	196.5	40	11	23	1	.....	.....	1.09
1924	4	22	16	56	179	46.5	6	9	1	.....	1	1.03
1925	7	64	53	267.5	400	100.5	27	8	5	.....	.....	1.24
1926	8	76	20	297	651.5	73.5	16.5	12.5	6	2	1	1.19
1927	8	102	68	374.5	725	170	36	32.5	7	1	5	1.14
1928	12	121	72	422	1001.5	131	17	69	4	.....	2	1.15
'1929	11	182	95	586.5	1291.5	349	40	59	9	5	1	1.09
Totals		596	351	2102	4466.5	916.5	153.5	213				1.14

Total grades—8202.5

TABLE VII.

DEPARTMENTAL JUNIOR COLLEGES BY YEARS COMBINED AT STANFORD UNIVERSITY

Years	*Number of Colleges*	*Number of Students*	*Number Hours "A" Grades 1st Semester*	*Number Hours "B" Grades 1st Semester*	*Number Hours "C" Grades 1st Semester*	*Number Hours "D" Grades 1st Semester*	*Number Hours "E" Grades 1st Semester*	*Number Hours "F" Grades 1st Semester*	*Withdrew*	*Probation*	*Disqualified*	*Grade Point Ratio*
1923	1	6	22	23	32	5	.....	14	.....	1	.....	1.35
1924	4	7	30	29	34	9	4	.....	.....	1	.....	1.68
1925	2	4	9	29	10	9	.....	.....	.....	1	.....	1.67
1926	2	4	4	16	26.5	4	.....	5	.....	1	.....	1.18
1927	6	8	5	52	44	3	.....	10	.....	1	.....	1.34
1928	9	25	43	137	139	41	.....	18	1	4	.....	1.39
1929	10	25	36	142	141	18	.....	1	2	.....	.....	1.57
Totals		79	149	428	426.5	89	4	48				1.47

Total grades—1144.5

TABLE VIII.

DISTRICT JUNIOR COLLEGE BY YEARS COMBINED AT STANFORD UNIVERSITY

Years	*Number of Colleges*	*Number of Students*	*Number Hours "A" Grades 1st Semester*	*Number Hours "B" Grades 1st Semester*	*Number Hours "C" Grades 1st Semester*	*Number Hours "D" Grades 1st Semester*	*Number Hours "E" Grades 1st Semester*	*Number Hours "F" Grades 1st Semester*	*Withdrew*	*Probation*	*Disqualified*	*Grade Point Ratio*
1923.....	7	15	19	85	69	36	.....	15	.....	1	.....	1.25
1924.....	8	23	36	144	127	18	.....	9	.....	1	.....	1.54
1925.....	7	40	90	165.5	235	58	6	15	1	4	1	1.43
1926.....	7	70	130	337	332	161	15	66	3	12	2	1.26
1927.....	10	73	121.5	354	434	106	10	55	1	9	1	1.33
1928.....	11	78	110	419	461	158	4	42	.....	9	.....	1.33
1929.....	13	123	200	669.5	673.5	235.5	.....	57	1	13	.....	1.39
Totals.....		422	706.5	2174	2331.5	772.5	35	259	.....	.....	.....	1.35

Total grades—6278.5

TABLE IX.

DECEASED JUNIOR COLLEGES BY YEARS COMBINED AT POMONA COLLEGE

Years	*Number of Colleges*	*Number of Students*	*Number Hours "A" Grades 1st Semester*	*Number Hours "B" Grades 1st Semester*	*Number Hours "C" Grades 1st Semester*	*Number Hours "D" Grades 1st Semester*	*Number Hours "E" Grades 1st Semester*	*Number Hours "F" Grades 1st Semester*	*Withdrew*	*Probation*	*Disqualified*	*Grade Point Ratio*
1914.....	1	1	.....	6.5	4	.....	4	.....	.....	.....	.....	.90
1916.....	2	4	4	37	22	.....	.....	.....	.....	.....	.....	1.71
1917.....	3	6	33	57	3	.....	.....	.....	.....	.....	.....	2.32
1918.....	1	1	3	1	.....	.....	.....	.....	.....	.....	.....	2.75
1919.....	3	8	41	73	14.5	.....	3	.....	.....	.....	.....	2.13
1920.....	2	2	.....	15	15	.....	.....	.....	.....	.....	.....	1.50
1921.....	5	7	21	39.5	31.5	3	3	.....	.....	.....	.....	1.74
1925.....	1	1	3	7	3	3	.....	.....	.....	.....	.....	1.63
1926.....	1	1	.....	6	8	2	.....	.....	.....	.....	.....	1.25
Totals.....		31	105	242	101	8	10	.....	.....	.....	.....	1.91

Total grades—466

TABLE X.
DEPARTMENTAL JUNIOR COLLEGES BY YEARS COMBINED AT POMONA COLLEGE

Years	Number of Colleges	Number of Students	Number Hours "A" Grades 1st Semester	Number Hours "B" Grades 1st Semester	Number Hours "C" Grades 1st Semester	Number Hours "D" Grades 1st Semester	Number Hours "E" Grades 1st Semester	Number Hours "F" Grades 1st Semester	Withdrew	Probation	Disqualified	Grade Point Ratio
1917	1	3	10	29	3	.....	3	.....	.....	.....	.....	1.96
1918	2	3	4.5	26.83	3.33	.....	.....	.....	.....	.....	.....	2.03
1920	1	1	3	1	13	.....	.....	.....	.....	.....	.....	1.41
1921	1	4	1	30.5	30	3	.....	.....	.....	.....	.....	1.46
1922	2	6	7	31	32	6	7.5	.....	.....	.....	.....	1.29
1923	2	8	8	59	48	6	.....	.....	.....	.....	.....	1.57
1924	1	3	3	3	20	15	6	.....	.....	.....	.....	.62
1925	2	6	5	41	31	6	6	.....	.....	.....	.....	1.38
1926	3	9	9	69	57	3	.....	.....	.....	.....	.....	1.61
1927	3	3	.....	27	14	3	.....	.....	.....	.....	.....	1.55
1928	2	5	1	5	44	18	3	.....	.....	.....	.....	.76
1929	3	11	29	38	75	20	3	.....	.....	.....	.....	1.42
1930	4	5	3	6	23	3	3	.....	2	.....	.....	1.08
Totals	67		83.5	366.33	393.33	83	31.5	.....	.....	.....	.....	1.40

Total grades—957.66

TABLE XI.
DISTRICT JUNIOR COLLEGES BY YEARS COMBINED AT POMONA COLLEGE

Years	Number of Colleges	Number of Students	Number Hours "A" Grades 1st Semester	Number Hours "B" Grades 1st Semester	Number Hours "C" Grades 1st Semester	Number Hours "D" Grades 1st Semester	Number Hours "E" Grades 1st Semester	Number Hours "F" Grades 1st Semester	Withdrew	Probation	Disqualified	Grade Point Ratio
1916	1	1	.....	14	.....	.....	.....	.....	.....	.....	.....	2.00
1917	2	3	11	31	3	.....	3	.....	.....	.....	.....	1.97
1918	3	4	26	38.33	3.66	.....	.....	.....	.....	.....	.....	2.33
1919	4	8	27	79	9	.....	6	3	.....	.....	1	1.93
1920	3	7	31	50	27	3	.....	.....	.....	.....	.....	1.98
1921	4	17	23	115.5	100	34	.....	.....	.....	.....	.....	1.46
1922	4	30	57	225.5	165	19.5	4.5	.....	.....	.....	.....	1.66
1923	4	27	74	177.5	142	22.5	9	3	.....	.....	.....	1.65
1924	4	25	61	150.5	140	24	9	.....	.....	.....	.....	1.60
1925	4	36	97	184	172.5	38	21	.....	.....	.....	.....	1.58
1926	4	36	75.5	242	173	19	19	.....	.....	.....	.....	1.64
1927	7	17	24	102	95.5	22	10	.....	.....	.....	.....	1.43
1928	8	23	23	126	115	33.5	24.5	6	1	.....	.....	1.24
1929	10	44	101	271.5	224	54	6	8	.....	.....	.....	1.59
1930	8	31	74.5	213	147	28	.....	.....	1	.....	.....	1.72
Totals	309		705	2019.83	1516.66	297.5	112	20				1.60

Total grades—4671

1. *Are the junior colleges preparing adequately for advanced work in the four-year colleges and universities?*
   The combined grade point ratio of 4,323 students who have achieved 61,766 1/3 hours of work in six higher institutions is shown by Table II as 1.24. The grade point ratio is generally used to determine the degree of success or failure that students achieve. A grade point ratio of 1.24 is regarded by all higher institutions as an evidence of success. Furthermore, of 61,766 1/3 hours of work achieved during the first semester of attendance in the higher institutions, only 2.7 per cent of the total is of "F" grades, and only 2.4 per cent of the total of "E" grades. The fact that only 52 students out of 4,323 were disqualified at the end of their first semesters of work—less than 1.2 per cent—proves that the junior colleges are preparing adequately for advanced work in the higher institutions.
2. *Should the small junior college be discouraged?*
   The facts set forth by Tables III, V, VII, IX and X set forth clearly that the departmental junior colleges, which are smaller than the district junior colleges, prepare adequately for advanced work in higher institutions, and that the small junior college is doing well the work of the Lower Division.
3. *Should junior colleges confine themselves wholly to semi-professional and technical work, and leave to the four-year colleges and universities the work of the Lower Division?*
   If the junior colleges should do this, they would probably soon cease to exist, or else could not serve their communities as they should. The success of their students in higher institutions is abundant proof that they should continue with strong academic curricula designed to train students for the junior year of higher institutions. If they should fail to do this, they would fail in one of their important functions.
4. *Are the public junior colleges of California realizing their functions?*
   The fundamental functions of the junior college, as they have worked out in practice, are:
   1. To give training above the high school level for occupational life.
   2. To give opportunity for young people who cannot afford to go to a four-year college to complete the Lower Division requirements.
   3. To salvage through guidance and through corrective curricula those students who have graduated from high school and who have not achieved sufficient recommendation to enter the higher institution of their choice.

   While there are other functions in operation, these three are the most important. The foregoing pages have set forth how the junior colleges have been performing their functions. There is further study required in the consideration of the third function.

While the first semester records of 4,323 students have been shown in Tables II to XI, yet, just what was the status of each student when he entered the junior college? A study of the high school records of these same students has been undertaken. When this study is completed it will set forth clearly that the junior colleges have performed a fine service in training many non-recommended high school graduates for the continuance of their higher education. In this study each junior college transfer's record is judged upon the following bases:

1. Did the student receive "A" or "B" grades in 3 units of English?
2. Did the student receive "A" or "B" grades in 2 units of mathematics?
3. Did the student receive "A" or "B" grades in 2 units of foreign language?
4. Did the student receive "A" or "B" grade in 1 unit of science?
5. Did the student receive "A" or "B" grade in 1 unit of history?
6. Did the student upon graduation from high school have 15 units of recommended grades?
7. Did the student upon graduation from high school qualify for entrance to the University of California according to the 1931 entrance requirements?

Table XII presents a method of determining the status of the junior college transfers at the time of their entrance into junior colleges. The facts may be viewed also from the standpoint of the success of the junior college in training non-recommended high school graduates for success in higher institutions. They also show definitely that comparisons between native students and junior college transfers are not comparisons of "like with like." Table XII presents a study of the first 287 transfers whose entire high school records have been studied.

TABLE XII.

HIGH SCHOOL RECORDS OF JUNIOR COLLEGE TRANSFERS

Number of cases	287
Number of students withdrawing without records	10
Number without high school credits at time of entrance into junior college	3
Number with 15 recommended units at time of entrance into junior college	133—38.6%
Number of the 287 having "A" or "B" grades in 3 units of English	217—75.6%
Number of the 287 having "A" or "B" grades in 2 units of mathematics	201—70 %
Number of the 287 having "A" or "B" grades in 2 units of one language	204—71 %
Number of the 287 having "A" or "B" grades in 1 unit of history	251—87.4%
Number of the 287 having "A" or "B" grades in 1 unit of science	228—79.4%
Number of the 274 meeting the 1931 entrance requirements	106—38.7%
Number of the 274 students not meeting the 1931 entrance requirements	168—61.3%

The first semester records in higher institutions of 171 of these students were studied. This study showed that 43.8 per cent of this group had 15 high school recommended units, but only 36.2 per cent would qualify for entrance to the University of California according to the 1931 entrance requirements; yet of 2556.5 hours of work completed in three higher institutions during their first semesters,

9.6 per cent is of "A" grade
28.9 per cent is of "B" grade
46. per cent is of "C" grade
9.8 per cent is of "D" grade
2.6 per cent is of "E" grade
2.5 per cent is of "F" grade

A more extensive study will probably show the same general tendencies, and will be of great value in justifying, or in proving wrong the following *conclusions:*

1. The junior colleges are performing successfully the "salvage" function.
2. Our admission standards might be modified.
3. Factors entering into scholastic success other than scholarship are (1) character, (2) industry, (3) persistence, (4) adequate guidance.
4. Junior colleges may very well admit students of good character.

Procedure for an Adequate Junior College Program

This article would be incomplete without *a procedure for determining the adequacy of a junior college program.* When citizens, or taxpayers, or educators judge a given junior college, upon what will they base their judgments? The following eight criteria might very well be

the basis of deciding whether or not a junior college is fulfilling its functions and meeting the needs of its district:

1. The per cent of high school seniors of the junior college district who enroll in their junior college after graduation from high school.
2. The non-academic offerings of the junior college as to
   (a) Technical one-year and two-year curricula.
   (b) Semi-professional one-year and two-year curricula.
   (c) Terminal curricula.
3. The holding power of the junior college as shown by the per cent of freshmen who remain the second year in the junior college. (The junior college should be allowed to develop for at least five years before applying this criterion.)
4. The success of the junior college transfers in higher institutions. Cumulative records should be kept; the junior college should be judged in this respect by the cumulative record in many institutions, and not by the records in a single higher institution. Geography is a great factor in determining where students attend. A grade point ratio of 1 or above should be regarded as satisfactory, and where the grade point ratio falls below 1, it might still be regarded as satisfactory if a large proportion of the junior college students were shown to have been of the non-recommended type.
5. The success of the junior college in salvaging non-recommended high school graduates.
6. The success of the junior college in preparing the students for occupational life.
7. Evidence that the junior college has established a functioning counseling system.
8. Evidence that the junior college has proven itself to be a community school, serving the needs of its district.

TABLE XIII.

ACHIEVEMENT RECORDS OF TRANSFERS OF JUNIOR COLLEGE "A" IN HIGHER INSTITUTIONS

Institution	*No. J. C. Students*	*Number Hours A's*	*Number Hours B's*	*Number Hours C's*	*Number Hours D's*	*Number Hours E's*	*Number Hours F's*
U. C., Berkeley.....	46	46.5	172.5	335	90	2	10
U. C., Los Angeles..	154	81	662	1135.5	173	13	24.5
U. of Sou. Cal.....	77[3]	187	392	440	130	19	17
Stanford Univ.....	33	67	196.5	185	40	8	11
Pomona College	19	39	126.5	100.5	8	6	4
Redlands Univ.....	13[3]	25	115.5	56	8	4	4
Total	342	445.5	1665	2252	449	52	70.5

Total hours—4934.

Per Cent of Each Type of Grade of the Total

	Total Hours						
U. C., Berkeley.....	656	7.1	26.2	51	13.7	0.3	1.5
U. C., Los Angeles..	2089	3.8	31.6	54.3	8.3	0.6	1.1
U. of Sou. Cal.....	1185	15.7	33	37.1	10.9	1.6	1.4
Stanford Univ.....	507.5	13.2	38.7	36.4	7.8	1.5	2.1
Pomona College	284	13.7	44.5	35	2.8	2.1	1.4
Redlands Univ.....	212.5	11.7	54.3	26.3	3.7	1.8	1.8
Total	4934	9	33.7	45.6	9.1	1	1.4

[3] Diploma students are included.

TABLE XIV.

A STUDY OF TRANSFERS OF JUNIOR COLLEGE "B" IN RELATION TO ENTRANCE REQUIREMENTS

	No. with 15 Rec. H. S. Grades	*No. with less than 15*	*Number Meeting 1931 Entrance Req.*	*Number not Meeting 1931 Entrance Req.*	*No. Disqualified*	*No. Probation*	*Number Hours A's*	*Number Hours B's*	*Number Hours C's*	*Number Hours D's*	*Number Hours E's*	*Number Hours F's*	
Junior College B Tr. at U.C., B.	20	29	23	26	0	0	90	176	332	69	15½	11	
Junior College B Tr. at U.C.L.A.	21	27	14	34	2	1	34½	174	386	93	17	33	
Junior College B Tr. at P. C.	34	37	25	46	2	0	120½	379	444½	90½	33	11	
Junior College B Tr. who entered	1	F[4]		1	1				3		3	10	
		B											
J. C. without credits	1	F		1			4	3	9				
		B					3	9	3				
	1[5]			1									
Totals	75	96	62	109	5	1	252	741	1177½	252½	68½	65	2556½
Per cent of the total							9.6	28.9	46	9.8	2.6	2.5	

Total Grade Point Ratio—1.28

Conclusions

I. FACTS

Number junior college transfers in study..... 171
Number junior college transfers with 15 high school recommendations.....75, or 43.8%
Number junior college transfers meeting 1931 entrance requirements.....62, or 36.2%
Total number hours first semester.....2556.5
Per cent of total satisfactory, A-C.....84.9%

II. SUGGESTIONS

1. Junior college B has done a fine piece of salvaging.
2. Admission standards may be wrong.
3. Factors enter into scholastic success other than scholarship, *e. g.*, (1) Character; (2) Industry; (3) Persistence; (4) Adequate Guidance.
4. Junior college B should not hesitate to admit students of good character.

From such a study as has been presented there can be developed a procedure for determining whether or not a junior college is succeeding in preparing students for advanced work. Tables XIII and XIV set forth clearly that these junior colleges have been preparing their students adequately for the work of higher institutions. Table XIV shows the amount of salvaging that Junior College B has been doing. This table also presents a procedure to determine whether or not its grading system checks with admission requirements, and whether or not the admission requirements are justified with respect to entrance into certificate courses within the junior college. The conclusions and suggestions may be used by the committee on admissions of Junior College B.

It is hoped that the counselor of junior college transfers of the University of California may be of practical help to the junior college administrators of California. His purpose in presenting this study is to lend encouragement to this great movement in secondary education—the greatest forward movement in recent years.

[4] Federal Board trainee.
[5] Entered junior college from 8th grade.

IS TEACHING A PROFESSION?*

CHARLES B. MOORE
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IS Teaching a Profession? Faced with determining upon short notice a title for the subject which I was to discuss, I decided upon the conservative and prosaic title just announced. The sensation-loving side of my being tempted me to announce as my topic "Up from Slavery." I might have yielded to the temptation but for the implication that I was scheduled to review Booker T. Washington's remarkable autobiography.

Indeed, it gives us rather a start when we realize that our forebears, professionally speaking, were *ofttimes* if not *usually* slaves. The evolutionist would probably aver that some of the questionable ear-marks of our profession today are but vestigial remains of that earlier day when we were bought and sold, traded, berated or praised, beaten or coddled at the whim of our owners.

If any of my hearers thinks that I am exaggerating or straining a point he has only to turn to the pages of Greek and Roman history or read his Plautus and Terence to have brought home vividly the fact that teaching (or tutoring) was once largely a servile occupation. I suggest "tutoring" rather than "teaching" because the theory of mass production in the act of learning or of imparting knowledge is of *relatively* recently origin. The idea of Mark Hopkins and the student on opposite ends of a log constituting a university is not at all modern. Indeed, until the churches began gathering the younger ones of their flocks together for instruction with a modicum of secular knowledge to give variety to a mass of religious information, schools, as we know the term, could scarcely be said to have existed.

Evolution of the Pedagogue

Dr. Lynn Thorndike in his "Medieval Revival of Learning" says of this period:

> Both the teachers and alumni of these ecclesiastical schools rose to high positions in Church and State; but what was taught and learned at these places seems very scanty to us today. The main point, however, was that the students thought that they were learning something and sang the praises of their instructors forever after. There was at least, therefore, a growing enthusiasm for learning.

That the evolution of the pedagogue was by this time in the latter portion of the pollywog stage is revealed in another passage of Dr. Thorndike's chapter on the revival of medieval learning:

> North of the Alps in the early twelfth century teachers had become much more numerous than before. Indeed, one writer of the time, William of Conches in Normandy, complained bitterly that education had already become too popular, that many were teaching without adequate preparation, that most students took

*Address before the annual convention of California Secondary School Principals, Santa Cruz, April 1, 1931.

> easy courses with popular professors instead of with the truly profound and original scholars, and yet that every teacher's time was so occupied with classes that he had scant leisure left for research and publication. This tendency to criticize existing educational conditions was one of the marks of the new age, and we shall meet further instances of it.

This reference would seem to indicate that the problem of the "teacher load" with which we are wrestling today is at least 800 years old. The literature of the latter part of the eighteenth century and early nineteenth reveals some interesting portraits of the teacher of that period. A hundred and sixty years ago Oliver Goldsmith depicted him thus:

> There, in his noisy mansion, skill'd to rule,
> The village master taught his little school.
> A man severe he was, and stern to view;
> I knew him well, and every truant knew:
> Well had the boding tremblers learn'd to trace
> The day's disasters in his morning face;
> Full well they laugh'd with counterfeited glee
> At all his jokes, for many a joke had he;
> Full well the busy whisper, circling round,
> Convey'd the dismal tidings when he frown'd;
> Yet he was kind, or if severe in aught,
> The love he bore to learning was in fault.
> The village all declar'd how much he know;
> 'Twas certain he could write, and cipher too,
> Lands he could measure, terms and tides presage,
> And even the story ran that he could gauge. * * *

The last accomplishment is something that few of us could do now.

We all recall the picture of Ichabod Crane, painted for us a little over one hundred years ago by Washington Irving:

> When school hours were over, he was even the companion and playmate of the larger boys; and on holiday afternoons, would convoy some of the smaller ones home who happened to have pretty sisters, or good housewives for mothers, noted for the comforts of the cupboard. Indeed, it behooved him to keep on good terms with his pupils. The revenue arising from his school was small, and would have been scarely sufficient to furnish him with daily bread . . .; but to help out his maintenance, he was, according to country custom in those parts, boarded and lodged at the houses of the farmers whose children he instructed. With these he lived successively, a week at a time, thus going the rounds of the neighbourhood, with all his worldly effects tied up in a cotton handkerchief.
>
> That all this might not be too onerous on the purses of his rustic patrons, who are apt to consider the costs of schooling a grievous burthen, and schoolmasters as mere drones, he had various ways of rendering himself both useful and agreeable. He assisted the farmers occasionally in the lighter labours of their farms; helped to make hay; mended the fences; took the horses to water; drove the cows from pasture; and cut wood for the winter fire.

The practice of eking out a meager income by "boarding around" was not at all uncommon within the recollection of some of us in this hall today. Nor can we console ourselves with the thought that these vignettes can be dismissed as the caricatures of humorous writers. We must remember that elementary and secondary *schools* are relatively modern; that only the favored children of wealthy homes had tutors; and that the *school* was originally the device of poor parents who pooled their scanty resources to

employ a teacher for a small group of children during the inclement season of the year. Until comparatively recent years only the college professor and the *tutor* had any social or professional standing. The teacher was all too often some one who had picked up a smattering of knowledge and whose economic state was such that he was glad to accept the pittance, however small, offered for his services. Indeed, to this day, in the ears of the general public the term "professor" carries with it a degree of prestige out of all proportion to that accorded the term "school-master."

In a very illuminating article by J. O. Tressler in Vol. 8, No. 8, of *Ohio Schools,* the author introduces his subject, "Elevating Teachers in the Public Mind," by the following comments:

> Reports from many sources seem to indicate that teachers in America are not genuinely honored, respected, and remunerated as are the teachers in many countries. In foreign countries *teaching* ranks with the professions of law, medicine, and the ministry. The principal of a secondary school in Sweden is given the rank of major-general. The same things cannot be said about teachers in America. All of these factors would lead us to believe that teachers in America have failed to sell themselves to the public.

Why Teaching Is Not Definitely a Profession

If teaching is not as definitely a profession in America as it is in certain foreign countries let us look at some of the causes therefor and seek to discover the remedy.

The first cause that I shall assign is the exceedingly short average term of service of the teacher in the United States; or, to use a trade term, the heavy "turnover." This last term has never been accurately defined. It is sometimes used to indicate the number of persons added to the staff within a given period (additions), sometimes the number whose employment is discontinued within a given period (separations), sometimes the number of persons leaving who are actually replaced (replacements). Some of the studies of "turnover" have not had data to show whether or not the teachers concerned were leaving the profession or simply transferring to another field—hence the great variation in statistics published on this question. There are three, in particular, carefully prepared and well defined studies of this problem, all published since 1925, dealing with term of service of teachers in Iowa, Wisconsin and New York states. They are published in the *American School Board Journal,* Vol. 71, pp. 52-54; *Alumni Press,* University of Michigan, 1928, and *Teachers College Record,* 1928, respectively. Then there are reports of the Committee of One Hundred of the N. E. A. in 1926 and 1927 on the problem of tenure. The best average that one can strike among these somewhat conflicting reports places the term of service of teachers at somewhat over eight years in cities and something under five in rural districts and towns. The gross percentage of changes in teaching personnel in high schools in New York State runs over 15 per cent annually. In the January 1931 issue of *The Nation's Schools,* C. J. Shambaugh of Mayfield, California, presents a study of total number of teachers leaving the secondary schools of the State, not merely transferring. His study would seem to indicate a gratifying drop in number from a peak of 17½

per cent in 1920 to a minimum of 12 4/10 per cent in 1928. The figures for New York State and California are both doubtless lower than would prevail for the country at large. Consider the cost in supervision and administration occasioned thereby, to say nothing of partial demoralization of the work of hundreds of thousands of children.

Thomas Alexander, of Teachers College, New York, has recently published a very illuminating book on "The Training of Elementary Teachers in Germany."[1] With Beryl Parker as co-author he has also published a study of "The New Education in the German Republic."[2] In these books the author makes some very interesting comments upon the status of teaching as a profession in Germany as compared with that in the United States. This, for example:

> We have mentioned only the most important of implications of German teacher training for American schools, but we should also mention another aspect of the situation which is significant for us—the professional status of the teacher. Teaching has for generations been a profession in Germany, respected and sought after. The sound basis of any profession rests on adequate preparation, economic security and assurance, permanence of position, and respect on the part of the community. All of these items of course interlock, so that none of them can be considered without the others. A long, adequate training cannot be obtained without economic security on the part of those entering the profession, while economic security cannot be granted unless long and adequate training has been made. One of the chief advantages the schools in Germany have over the American schools is the permanent, well-trained teaching staff. While salaries are not high, they are adequate and permanent. The teacher is not at the mercy of the school board, a superintendent, or the public. The principle underlying salaries in Germany is that they must be of such character as to permit the teacher to devote his entire time and energy to the service of the state, without being required to pursue gainful occupations outside of the school, and without worrying about what will become of him in his old age, or what will become of his family in the case of his death or his inability to carry on with his work. The physical and economic conditions of a teacher in Germany are made so that normally he can pursue his work happily and without distracting financial worries which direct his attention away from his real work, or which persuade him to leave the profession after a few years.[3]

It would appear, then, that in the past teaching has all too often been regarded as a stepping stone or way station to a college professorship, medicine, law, business, or marriage—a condition far from conducive to the develpoment of a professional consciousness.

Another reason that I would assign for tardy development of professional consciousness has been the great preponderance of women teachers. Although the use of the pronoun "he" to indicate common gender in place of the awkward "he or she" is sanctioned by our grammarians, in how many addresses do you ever hear the speaker use any pronoun but "she" in referring to teachers? Again I quote Dr. Alexander:

> For American readers who are accustomed to a teaching profession largely made up of women, it may be well to emphasize the fact that 75 per cent of the elementary school teachers of Germany are men, and in rural schools women are rarely found. In the boys' secondary schools practically all teachers are

[1] Teachers College, Columbia University, New York City, 1929.
[2] The John Day Company, New York, 1929.
[3] Alexander, T., "The Training of Elementary Teachers in Germany," pp. 311-312.

men, while in the girls' secondary schools at least half of the teachers are women. Obviously the predominance of masculine teachers makes for permanence in the profession and permanence usually means more thorough preparation, wider experience, and greater interest in professional problems. It is natural also to expect that the aggressiveness and vitality of men would lead them to throw themselves into a struggle, like that for school reform, with more force than could be expected of a similar group of women. [I imagine that had Dr. Alexander witnessed the assault made by California women upon Assembly Bill 1630 recently he would have hesitated to make this last statement.] It would be unfair to draw comparisons between American and German teachers entirely on the basis of sex, for other factors have operated to draw a more capable type of man into the German schools than is usually found among American educators. Teaching has been a profession commanding considerable respect in Germany because the teacher is a state official with definite privileges, permanent tenure and a secure pension. Business opportunities are much more restricted in Germany than in the United States, so that the inducement of money-making draws comparatively few men teachers into industrial enterprises.[4]

Over against the 75 per cent of male teachers in the elementary schools of Germany set the 15 per cent in the United States in 1928 and the preponderance of men in German secondary schools as compared with 40 per cent in America, and this comment becomes more significant.

I beg the ladies of our group not to misunderstand me or to condemn me as an anti-feminist. I accede many points in favor of women as teachers. But I nevertheless think back with a degree of chagrin to my last teaching assignment when, in a polytechnic high school I was the only man in an English department of twenty-three, and believe that even the ladies will admit that it is unfortunate that English should be regarded as a subject for only women to teach and girls to study. Possibly Germany can point out to us a way of inducing more red-blooded men to become captains of education as well as captains of industry.

My next point deals with the infrequency with which teachers enter in any vital sense into community and civic affairs in America. No, I am not unmindful of community sings and the other activities of "community centers," service clubs, and the like. I am thinking of the infrequency of appearance of names of teachers upon boards of directors of chambers of commerce, boards of public works, commissions for charter revision, city planning and the like. The teacher is no longer apt to be crude or unacceptable socially, but in any conference made up of a cross-section of the leaders in civic and social life you will usually find him in a back seat.

When I was doing graduate work in Columbia University in 1902 Seth Low, a top-notcher in educational ranks, was elected mayor of New York on a reform ticket. His election to such a post created a sensation. Were any of our presidents other than Woodrow Wilson schoolmen in private life? Would not superintendents and school trustees do well, through liberal leaves of absence, to encourage their outstanding men to participate in civic affairs in a really vital way?

My next topic is the tardiness with which we have developed really effective professional organizations. The growing strength of such associa-

[4] Thomas Alexander and Beryl Parker, "The New Education in the German Republic," pp. 322-323.

tions is one of the most promising signs of the times. The growth of the National Education Association has been remarkable. More marked still, and of even more significance to this group, has been the growth of the California Teachers Association from a membership of 10,869 in 1920 to an enrollment of 36,019 in 1930 and an estimated increase to 38,000 for the current year. The enrollment of 463 in the Secondary School Principals Association of California and the very effective work accomplished ever since its inception by the officers and committees of this association is another of the hopeful signs of the times. Something of an off-set, however, to this hopeful tendency is the disturbing lack of willingness on the part of a great majority of our teachers to assume the responsibilities and burdens of professional leadership. The popular injunction to "let George do it" all too frequently prevails, with the result that leadership is often shunned by those best qualified and assumed by more willing but less capable persons. (Present company, of course, excepted.)

A pertinent question relating to our professional status is, *Do we really believe in our profession?* If so, why do we show so little zeal and enthusiasm in enlisting for service the intellectually inclined young men and young women of our schools? As a test, let each one present ask himself, "To how many of our finest graduates have I recommended teaching as a life work, as compared with those to whom I have outlined the possibilities in law, medicine, business, manufacturing, and civil or mechanical engineering?" As a further test, if you have a semi-annual "vocations day," analyze the personnel of the group who report to the prospective teachers section.

Another pertinent question (or impertinent, you may say), is, *Do we know a good teacher when we see one?* The law has forced us into a certain technique in proving that a teacher is poor enough to deserve dismissal. Just how explicit and concrete evidence can you produce that a teacher is a superior teacher? Yes, I have seen and used various admirable checking lists in this connection, but it seems to me that we have made a more thorough-going study of equitable grading of pupils by objective rather than subjective tests than we have in evaluating our teachers. Who will develop for us more satisfactory criteria for recognizing merit in our profession—or when shall we at least use religiously such criteria as we now possess?

Finally, *Do we have a generally accepted teacher's creed?* or, more learnedly, *Do we have a real philosophy of education?* The seven oft-mentioned, often eulogized objectives of education provide a fine framework upon which to build; but after we have planned the overlying structure, can we be sure that its doors will open into satisfying vocations, that its windows will look out upon the Elysian fields of leisure time and that its roof will shed the deluge of crime waves, economic depressions and social revolutions that are, have been, and are still to be?

Best Hope for Professional Growth

The title of this paper is a question. Its concluding pages in particular have been punctuated with still more queries to which the questioner does not know the whole answer. May I review, however, some of the notes of promise?

The average term of service of teachers is becoming longer. Earnings that formerly went into business nest eggs or hope chests are oftener going into extension courses and summer classes in education. Professional consciousness is growing, and teachers, united, are commanding a greater degree of public respect and consideration. It is not inconceivable that certain features of our economic upheaval will prove to be permanent and not merely transient. Possibly the glamor of material gain is to be dimmed in favor of a calling that deals with the fine stuff of which dreams are made. In that day, teaching may not only *be* but *seem to be* as attractive as gold getting.

Is teaching a profession? Yes, I should say that it is—a very high and venerable and honorable one, as exemplified by its *best* exponents; and this brings me to my concluding observation. The unescapable law of supply and demand functions in our ranks as well as elsewhere, and is now making it possible for us to secure the *best* teachers (if we know how to recognize them) and no longer be content with the *indifferent* or even the *good*. In my 'teens, society bid for my services and paid me fairly well to teach after a very meager high school course and before I had read a line of pedagogy or psychology. Until a very few years ago, a high school graduate, 18 years of age, might teach in California if he could pass the county board examination. Still fewer years ago the *entire output* of our teacher training institutions in California was inadequate to supply the annual State demand, according to an illuminating study made by the California League of Women Voters. Now the supply greatly exceeds the demand.

It would seem, therefore, that the surest step we can take in elevating our profession is to set up unmistakable criteria for judging the possibilities of the inexperienced teacher and the effectiveness of the more experienced. Then in fairness we should inscribe over the doors of our teacher colleges, "Only ye who show *great promise* may dare to enter here."

I have been long convinced that an indispensable qualification of a principal or superintendent should be his ability to recognize good teachers and good teaching, and that the exaltation of our profession to the rank which it deserves will depend largely upon our encouraging really eligible young people to enter our profession and upon our exercising sound discrimination in their selection and placement after a searching course of preparation has been completed.

Is teaching a profession? Yes, it is *a* profession, feeling its way and testing its wings, and we, its members in the here and now should not rest content until it has come to be recognized as not merely *a* profession, but *the* profession of *all* professions.

SOME VITAL PROBLEMS IN THE GUIDANCE OF CANDIDATES FOR TEACHER TRAINING*

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THERE is probably no form of social welfare work of greater consequence today than that of teaching. The conscious effort to transmit to the oncoming generation the accumulated heritage of the race and to direct the new generation in the way it should go has always been regarded as an important function of organized society.

But never before in history has that function been so vital to national perpetuity or so essential to the progress of civilization. It is for these reasons that this age is sometimes called "the era of the teacher." In no country is this title more appropriate than in our own United States. No other country can boast of having so large a proportion of the population —one in about 130—engaged in teaching full time.

It is obviously, therefore, a matter of serious concern, particularly to us in the United States, that our prospective teachers shall be wisely guided, carefully selected, thoroughly trained, and appropriately placed. The special concern of this address is with the first of these stages only, namely, *guidance*. And it is quite fitting that this question should be considered in a convention of high school principals, for it is in the high school that the first steps in guidance need definitely to be taken.

Teacher Supply and Demand

One of the first questions which comes to mind as a vital problem involved in the guidance of candidates for teacher training is that of the teacher supply and demand. This is a question the candidate cannot afford to ignore. In the majority of cases, the answers to the other vital questions are largely conditioned by the nature of the supply and demand. The intelligent youth does not want to spend time preparing for a vocation which is markedly overcrowded. Or, if he does decide to prepare for it, even though it is overcrowded, he wants to be tolerably sure that he is at least fairly gifted in the field of his choice.

A survey of the conditions of supply and demand the country over disclosed the fact that there are many areas where the teacher turnover is still high. On the other hand, it shows also that there are a few areas where, as in our own State, it is clearly low.

Mrs. Evelyn Clement, Chief of the Division of Teacher Training and Certificaton of our State Board of Education, made a study late last year

*Address before the annual convention of California Secondary School Principals, Santa Cruz, March 30, 1931.

of the oversupply of teachers in this State as reflected in the records of the placement offices of our twenty-five authorized teacher-training agencies. Her findings show that there were on the records of these agencies nearly 1500 registered unemployed teachers holding California State credentials. Over 50 per cent of these registrants had the highly prized general secondary-school credential, which entitles the holder to teach all grades and all subjects in any of the schools of the State. It might be of interest to note that only ten per cent of the total number were found on the books of the seven State teachers colleges. President C. L. Phelps of the State Teachers College at Santa Barbara asserts, in a letter to State Superintendent Verling Kersey, that a survey of the graduating classes of this year in the seven State teachers colleges shows a decrease of thirty per cent as compared to last year. This means that so far as the supply furnished by the State teachers colleges is concerned there will be a definite shortage.

The condition of oversupply had been anticipated by the State school authorities more than ten years ago. On their recommendation the then normal schools were converted into teachers colleges and were authorized to give four years of professional training leading to State certification and to the bachelor's degree. Later, as conditions warranted it, the two-year normal school requirement for elementary certification was raised to a three-year college requirement, and that in turn to the present four-year requirement. The last requirement leads not only to State certification but also to the bachelor's degree. For a number of years back, the four-year requirement had prevailed for the special subjects, such as industrial arts and home economics. And for a much longer time, a five-year collegiate requirement, with at least fifteen units of educational courses, prevailed for teachers in secondary schools.

The lengthening of the period of training in teachers colleges has been accompanied by a parallel raising of the standards of admission. The standards now are similar to those effective for admission to the State University. It was confidently expected that increasing the length of the course and raising the standards of admission would discourage entrance into the teaching profession. But this was not the effect produced. The very reverse happened. More high school graduates who qualified for college entrance flocked to the teachers colleges or entered the education department of one of the liberal arts colleges or of the University.

Time was when the lame, the halt, and the otherwise physically handicapped, as well as the somewhat intellectually low were encouraged to take up teaching as a life work. You may recall from your educational history that Benjamin Franklin, in the middle of the eighteenth century, in outlining the service that his proposed Philadelphia Academy might render, specified, after enumerating the main types of persons whom it might serve, that "Others of the lesser sort might be trained as teachers." This surely does not speak too well for our professional ancestry of that day.

Teaching in those early days, and for a long time thereafter, was painfully unattractive. It was extremely underpaid. It ranked sadly low in

the social scale. The housing, equipment and facilities for formal education were so miserable as to discourage all save the neediest from undertaking the work of teaching. Today, how different! Schools are being housed in increasingly attractive, well constructed and comfortably arranged buildings—the show places of small communities and the boast of large cities. The teachers are, comparatively speaking, well paid and their social standing is steadily increasing. In many states the teachers have satisfactory tenure. In over half of the states teachers are retired in old age on annuity salaries sufficient to keep them in at least fair comfort. The end of improvement of conditions for the teachers and of advancement for the teaching profession is yet far from fully reached. Gradually but surely, the teaching occupation is becoming increasingly more desirable, and is growing to be, in fact as well as in name, a real profession.

There is another contributory cause for the reduction of the number of teaching positions annually to be filled. It has been estimated that up to a decade ago the average length of a young woman's service in the schools was three years. By the end of that time the average young woman who had taken a position had married. Some had married without having had a position at all. In those days it was customary for the young woman upon marriage to give up her school position and devote herself to her home duties. Today the situation is quite different. The not-uncommon thing for the newly married woman teacher is to continue teaching, and quite often to remain in the work even after children have arrived. Whether this situation is bad or good is not within the province of this paper to discuss. Suffice it to point out here that this condition is reducing the number of teaching positions made available annually.

It is obvious from these facts and from many others that could be presented that at least in certain areas in this country teaching is no longer a free-for-all occupation open to anyone and everyone who fails to find something more lucrative to engage his time. Evidently, advancement in the teacher's status, financially and socially, and improvement in school conditions have wrought a material change in the opinion of young men and women as to the desirability of teaching as a vocation. The result of this change, especially in favored areas like California, is that teaching can no longer be used by men as a stepping-stone to something considered more desirable, or by women merely as a convenient stopgap that will serve comfortably to fill the interim between graduation and marriage.

Guidance of Candidates for Teacher Training

In view of the improvement in the desirability of teaching as a vocation, particularly so in such favored places as our own State, an important guidance problem has arisen. It is now incumbent upon those who are vested with the responsibility of giving young people guidance that they advise prospective candidates for teacher training of the growing difficulty in securing teaching positions. They should make known the great personal and social values which make teaching an increasingly

attractive calling. They should also strive to uncover potential teaching ability; and, having found it, encourage the possessor to enter the teaching profession. To such students, the advisor should point out the joy that comes from engaging in a social service than which there is perhaps none greater.

The problem here is: *Who shall be advised and encouraged to enter the teaching profession?* Obviously those who possess, or can readily acquire, the essential character traits and the necessary teaching abilities which distinguish the successful teacher. Many attempts have been made to list these traits and abilities. A study of the various attempts discloses the fact that, though they all differ to some degree in length and content, there are certain elements which are almost invariably given as essential. These elements may be grouped for convenience under one of four headings, namely: scholarship, character traits, personality, and physical fitness.

Perhaps the most distinctly scientific attempt to discover and list the traits and abilities which contribute most to success in teaching was made in connection with the Commonwealth Teacher Training Study a few years ago under the direction of W. W. Charters. With the aid of competent judges, Dr. Charters constructed a list of slightly over eighty items which he later, by a process of telescoping, reduced to twenty-five. This list of traits, together with the rank of relative importance given to each of them for the several divisions of the school organization are herewith appended for consideration.

RANK-LIST OF TEACHER TRAITS[1]

Traits	*Grade*	*Rank for Teachers of:* 10-11	7-9	3-6	Kdg.	Rural
1. Adaptability	8	10	8	6	1
2. Attractiveness, personal appearance	17	14	9	10	15
3. Breadth of interest (interest in community, profession, pupils)	1	10	11	15	2
4. Carefulness (accuracy, definiteness, thoroughness)	11	13	9	14	12
5. Considerateness (appreciativeness, courtesy, kindliness, sympathy, tact, unselfishness)	17	3	1	1	3
6. Co-operation (helpfulness, loyalty)	11	9	14	16	3
7. Dependability (consistency)	14	19	16	17	15
8. Enthusiasm (alertness, animation, inspiration, spontaneity)	9	4	5	2	11
9. Fluency	23	24	25	23	25
10. Forcefulness (courage, decisiveness, firmness, independence)	5	4	18	19	13
11. Good judgment (discretion, foresight, insight, intelligence)	2	1	3	4	3
12. Health	16	16	12	10	9
13. Honesty	7	12	7	9	6
14. Industry (patience, perseverance)	19	8	14	13	17
15. Leadership (initiative, self-confidence)	4	7	10	21	8
16. Magnetism (approachability, cheerfulness, optimism, pleasantness, sense of humor, sociability, pleasing voice, wittiness)	11	4	5	3	9

[1] Charters, W. W., "Commonwealth Teacher Training Study," p. 18.

17. Neatness (cleanliness)	20	16	13	4	18
18. Openmindedness	9	20	23	24	22
19. Originality (imaginativeness, resourcefulness)	22	22	16	12	19
20. Progressiveness (ambition)	23	23	22	20	22
21. Promptness (dispatch, punctuality)	21	14	20	18	21
22. Refinement (conventionality, good taste, modesty, morality)	14	20	2	8	13
23. Scholarship (intellectual curiosity)	5	16	21	21	20
24. Self-control (calmness, dignity, poise, reserve, sobriety)	2	2	3	6	6
25. Thrift	25	25	24	25	24

NOTE.—This table should be read as follows: On the basis of an average of the ranks given to the item of "adaptability," it is eighth highest in importance for teachers in the 10th to 12th grades, tenth highest in grades 7th to 9th, etc.

It will be observed that the rank attached to an item may be relatively high for one division of the school organization and comparatively low for another. For instance, the item "considerateness" is ranked first for the intermediate grades and for the kindergarten-primary; whereas, for the senior high school it is ranked seventeenth. Some items, on the other hand, are consistently high, as for instance "good judgment" and "self-control"; whereas, others like "progressiveness," "fluency" and "thrift" are consistently low.

Obviously, due to the possession of certain special qualifications or lack of certain others, a candidate for teacher training may be promising for one division of the school organization and not so promising, or even decidedly unsuited, for some other division. Take for illustration academic ability. As it appears from the table and as we know from experience, academic ability is more essential to the high school teacher than it is to the kindergarten teacher. On the other hand, love of children is clearly a more critical factor in the success of the kindergarten teacher than in the success of the high school teacher. These differences must be kept in mind when teacher training candidates are being considered and advised.

In connection with this topic of qualifications it should be noted that there are not alone intellectual qualifications, but also physical and (equally important, if not more important) moral qualifications. We have long had ways of determining fairly well physical qualities, and within the past quarter of a century methods have been devised by which intellectual qualifications may be measured with a reasonable degree of reliability. But objective measures of moral qualifications still elude the test maker, and are yet to be invented. Consequently, moral competence continues to be a matter of subjective determination. This fact explains perhaps to a considerable degree why, relatively speaking, so little deliberate attention is given to that all-important item. A general statement from some school official, based in the majority of cases on casual observations made as the result of infrequent contact, is usually about all that is available for guidance purposes. Yet it must be noted that all the keenness of intellect and all the vitality of physique that a teacher may possess can not compensate for any lack of strong moral character, so imperative in the high calling of teaching. Much more deliberate attention, it must be urged, therefore, should be given to this factor.

There is another problem to which the advisors must give attention in guiding the candidate for teacher training. They must tell him which are the best schools for training in the field of his election. This advice involves not only matters regarding courses, majors and minors, but also matters of expense, living arrangements, social conditions, and the like. When the branch of teaching is determined and the prospective school is decided upon the student should be urged to make every effort to meet the full entrance requirement for the selected curriculum and of the particular institution. He should be induced to take courses in the high school which will most effectively prepare him for his later work in professional preparation. Much grief and considerable disappointment will thus be avoided in the teacher training institution.

If the candidate is planning to enter the kindergarten she should be advised of the special need for a fair degree of artistic and of musical ability. This calls not only for appreciation in these arts, but also for ability to draw, to sing, and to play the piano. The prospective elementary grade teachers must be specially interested in developing ability in the so-called fundamentals. Her subject-matter knowledge need not be necessarily so extensive as that of the teacher of the higher grades. In the lower grades it is more important for her to know, and to be able to apply successfully, methods of developing ability in the tool subjects which are basic to the work in the higher grades. Beyond this point, as we go up in the grades, increasing importance is attached to the extent of subject-matter knowledge and to the degree of non-pedagogic technical skill.

The prospective teacher of the junior high school and (still more so) of the senior high school must be advised as to desirable subject combinations. Mrs. Clement, to whose study reference has already been made, reports that a considerable number of the unemployed teachers in this State failed to secure positions because of poor subject combinations. What these combinations should be differs slightly in different states and from time to time in the same state. In some states such a combination as English and some foreign language is a good combination. What the language should be depends on the section of the country. In some sections, for instance the Southwest, it is Spanish; in others, as in certain middle-western states, it is German; and in various parts of the country it is French. Frequently the most desirable language is the mother tongue of the local foreign population. Other combinations frequently called for are English and history, science and mathematics, manual training and physical education. In some instances one academic subject and physical education is the desired combination. What combination to recommend is largely a matter of individual ability and possible school demand.

Every candidate for teacher training in this State, before entering upon the expensive undertaking of the required four years of study, should be asked, since certainty of employment after graduation is no longer assured, to deliberate upon and carefully answer the following questions:

1. Am I possessed by a desire to serve others rather than to accumulate wealth?
2. Am I socially minded? Do I like to deal with people, particularly such as must look up to me for guidance, instruction and advice?
3. What age appeals to me most? Would I find most joy in dealing with kindergarten, primary, intermediate, junior high, senior high, junior college, senior college, graduate students, or non-college men and women?
4. Am I willing and able to pay the cost of preparation? Or being willing, though not able, have I the physical strength to work my way through college? Or is there a possibility of securing a scholarship? Or, lacking the strength and without the chance of securing a scholarship, can I afford to borrow the money to be paid back later?
5. Do I possess the intellectual caliber necessary for success in college work and later achievement in the teaching profession?
6. Am I willing to take up a calling which demands of the progressive worker constant study and continuous expenditures for books and magazines, occasionally for travel, and at intervals for additional professional training?
7. Have I the voice suited to a vocation that entails considerable speaking—sufficient volume, proper articulation, clear enunciation, and satisfactory inflection?
8. Is my English satisfactory—choice of words good, grammar correct?
9. Is my physical constitution strong enough to withstand the strain of a work that calls for the expenditure of much nervous energy?
10. Are my character traits such as will contribute to success in the teaching profession? Am I co-operative, enthusiastic, honest, industrious, self-controlled, forceful, dependable, adaptable, self-reliant, and possessed of leadership?
11. Would I rather teach than follow any other occupation available to me?

Only when these questions can be answered in the affirmative, or in the willingness to labor to master, should teacher training be elected.

It is to be regretted that the guidance material for this most important of social welfare occupations, the profession of teaching, is as yet rather unsatisfactory. It was hoped that the Commonwealth Fund Study would give us the necessary information. But after the expenditure of several hundred thousands of dollars, and the passage of a three-year period of investigation we were still far from the goal, though considerable progress in the desired direction had been made. The United States Department of Interior now, through its Office of Education, is to make a nation-wide survey. This will include an investigation of the qualifications of teachers, the supply of teachers available, and the needed teacher training. With such a leader in the field of teacher training as Professor E. S. Evenden of Teachers College, Columbia University, to direct the study, and with a $200,000.00 appropriation from Congress to cover the cost of the work, it is to be expected that we shall soon have at hand much valuable data to assist advisors in the guidance of candidates for teacher training.

We educators shall then be in a position to recruit for our worthy profession those who could help to elevate teaching to its rightful position of superior service—a service which is designed to keep alive the fine culture which has emerged out of the centuries of accidental development, and in leading to further progress this nation of ours. As I see it, this is not only the privilege and the opportunity of the teaching profession; it is, in addition, its duty. And only as the most promising recruits are secured for preparation can we hope to see the teaching profession, in time, fully realize its noble destiny.

A HANDBOOK FOR COUNSELORS

CHAPTER VI.*
APPLICATION OF THE TECHNIQUE OF COUNSELING

I. Pre-View

1. *How the Counseling Program May Be Introduced.* The initiative in putting into effect the counseling program may very naturally come from the administrative head of the school system. He may:

a. Have a guidance committee appointed.
b. Have a group intelligence test given to all of the pupils of the school.
c. Have a vocabulary test given to all pupils.
d. Have aptitude tests given to all pupils.
e. Introduce the home room advisory system.
f. Introduce a system of weekly conferences with the pupils who are failing and with those who are irregular in attendance.
g. Introduce a system of "spotting" pupils who need personal attention. Determine how to hold them to a corrective program and how to release them when they have begun to stand on their own feet.
h. Have a case folder for every pupil. The folder may contain an intelligence test, aptitude test, vocabulary test, a comprehension test as indicated by silent reading, changes of program, and other pertinent data. These folders should be made available to the home room teacher and should be kept confidential.
i. Provide a standard filing cabinet for each home room teacher.
j. Arrange for the physical examination of every pupil.
k. Devise ways and means of introducing a placement and follow-up procedure.
l. Create an interest in a district, community or county guidance council.

2. *Classification of Pupils.* For the most part the actual classification of pupils will depend upon the reaction of each pupil to the general routine of the school. A point system of service will call to the attention of the administrator those pupils who are most in need of special attention.

The service record of each pupil is invaluable in attempting to place him in a suitable vocation. "Some record of service is necessary in view of the requests of future employers, schools, etc., and perhaps a point system is the best system." [1]

A complete point system makes possible the discovery of those pupils who need stimulation and special service. It aids in discovering those who are responding to the tendency to overdo that which they have recently discovered they can do and those who are underdoing those things which they have discovered they cannot do.

The classification of pupils is most easily controlled by the point system of service because it calls to the attention of the administrator any tendency on the part of the pupil to overdo or to underdo or to fail in conforming to the procedure which the school has set up in the interest of the pupils.

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*For Chapter I refer to pp. 211-219, January, 1931, CALIFORNIA QUARTERLY OF SECONDARY EDUCATION; for Chapters II, III, and IV refer to pp. 286-305, April, 1931, for Chapter V refer to pp. 331-336, June, 1931, *Ibid.*

[1] "Character Education Through Pupil Participation," by Roy T. Nichols, CALIFORNIA QUARTERLY OF SECONDARY EDUCATION, Jan. 1931, p. 183.

3. *How the Preliminary Classification of Pupils May Be Effected.* Arrangements should be made to get acquainted with all the elementary school pupils during the year preceding the time they plan to enter the high school. The high school should obtain a transcript of the elementary school record by subjects and by grades, the scores of standardized tests and a physical and medical history of every prospective elementary school graduate.

After a testing program is completed the elementary school prospective graduates should be given opportunities to find out what the high school offers and should be requested to fill out appropriate forms.[2]

When this is completed the prospective entrants should be given whatever personal service is needed.

Arrangements should be made for what is designated as the High School Day, when every elementary school graduate will be welcomed to the high school and be introduced to the high school personnel. The high school teachers should follow out a carefully arranged program designed to make the prospective entrants feel welcome and at home, and enable them to understand how the high school can help them to realize their goals.

The detailed plans for this program should be carefully worked out in conference with the guidance committee of the high school and the administrative heads of all the elementary schools concerned. These plans should be discussed with the home room teachers and their suggestions and criticisms requested. The High School Day should be made the special subject for a faculty meeting. Every precaution should be taken to assure the greatest success of High School Day.[3]

The High School Day should constitute the practicable procedure for obtaining the data which will enable the high school to make the most satisfactory classification of entrants.

II. Integration

The success of any counseling program in any high school depends in very large measure upon how well counseling is integrated with the whole school program; and the effectiveness of such integration is determined by the efficiency with which the executive counselor marshals all the resources of the school and of the community into a co-operative enterprise.

In some high schools, particularly the small ones, the principals themselves may act as executive counselors.

Invariably the teachers, the pupils, the parents, the school and the community are involved in nearly every major consideration that confronts the executive counselor. He must, therefore, be prepared to meet every need as occasion arises. He should be able skillfully to lead all concerned to work open-mindedly and harmoniously. It may be said that his work is perfect when the whole machinery of the school is running harmoni-

[2] All forms to which reference is made in this chapter and other suggestive forms will be included in the Appendix.

[3] "The Tulare Guidance Program," by David L. MacKaye, CALIFORNIA QUARTERLY OF SECONDARY EDUCATION, April, 1929, p. 223.

ously, silently and effectively. The right kind of guidance committee is of great assistance to the executive counselor. Such committee may find the following outline of procedure helpful:

1. Meetings: a. Regular—at noon, early in the week.
   b. Special—at call.
2. Projects: a. Edit copy for the press—articles by faculty members and talented students.
   b. Consider needs for special regulations, rules, by-laws, amendments, constitutional revisions.
   c. Edit form letters for contacting homes.
   d. Study special classifications as needed.
   e. Check up on reactions to policies, procedures, and improve them in the light of experience.
   f. Edit questionnaires for research and survey.
   g. Condition the esprit de corps.
   h. Consider special reports and requests of students, teachers, homes and representatives of the community.

A co-ordinating council composed of representatives of all organizations which naturally work together in handling attendance and other so-called problem cases will also be of assistance. This has been found particularly helpful in Berkeley.

Such council functions through:

1. Meetings, regular and special.
2. Cases considered and assigned to the agency best able to serve the needs of the student.
3. Cases rotated as needed.
4. Reports obtained from teachers of students.
   a. Serious problems in school.
   b. Special ability, interests and aptitudes.
   c. Low mentality or retarded two or more years.
5. Location maps of truancy and delinquency cases.
6. Special conferences to plan rehabilitation of individuals or families.

The best method of acquiring the necessary equipment is to keep a requisition notebook. Every time there is a need for any equipment or supplies an entry should be made and tallied. This will give the frequency demand and will be a workable guide for planning the annual budget.

In small schools, the administrator's office or some small anteroom may be transformed into a conference room, which should be close to the central files. The ideal equipment would resemble that of a doctor's or a lawyer's office.

The teaching load of the executive counselor should be such as to enable him to discharge his duties effectively. He must have regular hours for conference work.

Perhaps the most important factor in conducting the executive counselor's program is clerical assistance. The efficiency of his work will depend upon the completeness of the files and other data. A check list of all records to be made out, altered or filed upon a student's entering or leaving school should be kept up to the minute. To complete medical examinations at the expense of hundreds of dollars and then leave them

unrecorded for months to save clerical expense of fifty dollars is worse than keeping no records.

In a school that is too small to have a part-time or a full-time executive counselor, the principal should act in that capacity.

III. Group Guidance

In order to reduce friction to the minimum, to prevent misunderstandings, and to stimulate an enthusiastic interest in school life on the part of the student, it is necessary to acquaint the entering student with the machinery of the school procedure so that he may be able to obtain effectively just what he most needs and desires, in the happiest and most pleasant manner possible, satisfying to himself and satisfactory to others.

This has been most effectively achieved by home room meetings and conferences; class meetings and conferences; assemblies; and by the use of a student's handbook.

A careful study of group guidance made by Roy T. Nichols,[4] and a combined study of the practices in many schools seem to justify the following recommendations:

1. Every member of the school should be considered a member of the "Associated Students" with nominal dues, membership cards, and at the beginning of each school period should be credited with a definite "point number" to be used as a base for grading the out-of-the-classroom activities.
2. Each Home Room should be organized with officers.
3. Each Home Room should be represented in the Legislature of the Associated Students by one or more, according to the size of the school.
4. The Executive Division of the Student Government (the Board of Control) should be composed of the officers of the Legislature of the Associated Students, and others selected by the Board of Control.
   a. The officers of the Legislature may be nominated by the Board of Control or by petition, or both; the election should be by secret ballot.
   b. The various student activities should be represented by an extensive committee or commission organization. These representatives should report periodically to the Board of Control and to the Associated Students.
   c. The Board of Control should report regularly to the Home Rooms.
   d. The Principal should be considered the Governor; his duties should be to pass or to veto all bills or resolutions passed by the Board of Control, all petitions for referendum, recall or initiative, to pass on the eligibility of all contestants, officers and representatives of the school, and to settle all constitutional disputes.
   e. The extent of student control should depend upon the development, organization and type of school: halls, yard, and traffic may be largely controlled by students; classrooms and study halls may be controlled by the students to a limited extent only.
   f. It should be expressly understood that all student powers, as set forth by the constitution, by-laws or standing rules, are delegated by the principal and that they may be revoked by him at any time.
5. The Judicial Division of the Student Government should be composed of judges nominated by the class officers, approved by the principal and appointed by the Board of Control.
   a. This age is rapidly outgrowing "fear psychology" and is more amenable to the rules of "understanding." Therefore, punishment should be used only when all other means fail.

[4] California Quarterly of Secondary Education, Jan., 1931, p. 177.

b. Violations of the general rules should be reported by recommendations for point fines subject to appeal to the principal or to the Student Court; serious offenses should be referred to the principal for study and for his recommendation for correction.

c. Students who lose points to a certain definite number—10, 15, 20—should be required to become members of the Self-Improvement Club, which should follow out the best procedures of clinics possible to the particular school; this club should meet regularly during the Activities Periods or Home Room Advisory Periods. The special conferences and interviews should be so arranged during the student's study periods, before and after school by appointment so as to interfere as little as possible with the regular growth and development of the student in his regular program.

6. A Student's Handbook should include all these provisions; other data to be included should be determined by a special study of good handbooks. The following have been studied by the writer:
Long Beach Polytechnic, 1930-31
Glendale High School, 1930-31
Roosevelt Junior High School, San Diego, January, 1931
Frank Wiggins Trade School, Los Angeles, 1930-31
Sacramento Senior High School, 1930
Berkeley High School, 1930
San Pedro High School, 1930
University High School, Oakland, 1929
Fresno High School
Salinas Union High School, 1930-31
Santa Cruz High School, 1931.
No doubt there are other equally suggestive and helpful handbooks.

We recognize that there are dangers in the point system. There are, however, practical advantages which justify further experimentation. The point system has been found to be one of the most effective methods for putting into effect a group guidance program.

Adequately to achieve group guidance, it is first necessary to decide upon the habits which are considered desirable and to attach "satisfiers" —point awards—to these acts, and, also, to determine what habits are socially and individually undesirable, and attach "annoyers"—point fines —to them.

This is the simplest and least expensive system of selecting students who need to have their programs enriched and those who need to be given consistent, persistent and careful personal attention to assist them in substituting new and better patterns for old and undesirable behavior patterns. It is one of the most effective ways of calling to the attention of the children the law of survival of the fittest. Too often one misstep means that the body of the erring one becomes the food of another more skillful in the art of living.

If the total points are studied by a one-point frequency graph for each class and the even interval distribution used for determining the point grade, the student has a periodical check upon his comparative strength or weakness in exact relationship to all the other members of his own class. This type of point system acts as a powerful stimulus for achieving social understanding, and an effective inhibitor of failure habits.

Considerable experimentation has been done in many schools with the administration of group guidance through the home rooms; some schools

"enlist practically all of the teachers on the faculty"; others concentrate all the work or the major part of it in counselors.

Perhaps the most effective results are obtained when the home room teachers act as advisors in following out a regular program outlined in a weekly bulletin by the executive counselor.

The best procedure for introducing a regular home room advisory guidance system is to obtain copies of the weekly bulletins from representative schools, make a special study of these in connection with what can be done in your particular school, and begin action. Make adjustments as they may be needed. The executive counselor should be responsible for this work.

Another effective means of obtaining group guidance is to plan departmental assembly programs so that the best work of the school is presented to the whole school in an entertaining way. Often the departmental assembly program may be used as a definite motivation for the whole educational program.

"How we learn" has been a special study even before "Dewey doing" was the slogan. It is generally conceded that we learn little by the vicarious methods except by inspiration; the rest is acquired by perspiration. For all those taking part there are many hours of mental and physical perspiration and some inspiration preceding and during the assembly program. Those in the audience often learn by "sympathetic perspiration," but most often by inspiration and sometimes desperation. At any rate, the departmental assembly corresponds very largely in value to the school life as the county fair to the total community life. State and national and even international fairs proved their worth long before educators thought of "showing off" their best products to the students and patrons of the school community.

IV. The Interview

The interview is the ways and means of assisting the student to create in imagination a chain of events which might follow should any one of a series of alternatives be chosen. The least desirable may be easily eliminated by a recognition of some undesirable potential result.

It is vital that the counselor permit plenty of time for the student to think—thinking is silent talking; thinking is hard work; it takes a good deal of time; the lower the student's I.Q., the more time is necessary for him to think out a satisfactory answer, much less think out an adequate reply. Spoken replies are not necessary. The experienced counselor knows when the child has had a mental reaction to a statement, followed by a question. The question is usually necessary to stimulate thought. This kind of work is mental surgery. An able counselor requires as much skill, technical knowledge and social understanding as an able physician and surgeon.

The success of the interview will depend upon the ability of the counselor to be a "transformer," to "step-up or step-down" mentally to contact the student's point of view. Just so long as the counselor thinks the student is dull, slow, stupid, unreasonable, just so long may he know the

interview has not yet begun. The minds must meet to be able to think together.

The first step in the interview is to "tune in" with the "speaker."

The second step is to "receive" the facts. This requires the art of stimulating conversation with appropriate questions, a "nose for news," an "ear for essential facts," and an eye that can read "expression." The student's individual folder will help.

The third step is to obtain the reaction of the student to the discovery of his need. If in error, the counselor must remember that atonement often is immediate and complete. Should that be the case the counselor can save time and retain respect and confidence by recognizing the fact.

V. Research

How to put into effect the methods by which the school environment can be changed so as the better to allow individual students to develop in the ways most valuable is very largely dependent upon research.

A careful study made by representative educators and laymen revealed the fact that there are three fundamental requirements necessary to succeed in any undertaking. These are skill, technical knowledge and social understanding. On an average thirty-five per cent of all failures are due to the lack of the first two; sixty-five per cent to the lack of the third.

It is also generally conceded that the best time to learn anything is just before the subject-matter is needed in some specific undertaking. The problem of research is to plan the program in such way that it will co-ordinate most effectively with the individual's practical life, present and future.

Social understanding is acquired largely when the individual is free from the artificial restraints of authority and the arbitrary controls of family, school, race or group patterns. This asset is gained largely in extra-curricular activities. When one recalls that sixty-five per cent of all failures on the job is due to a lack of social understanding, attention is inevitably centered upon ways and means of developing self-determination on the part of the individual in every way possible. The old school demanded implicit obedience to laws, customs, patterns which the youth had shared in no way in the making. Is it not probable that the failure of nearly fifty per cent of the American adult population to vote is due to the training to conform during school life to laws and customs already predetermined and seemingly unalterable?

There is an out-of-school life which goes on all the time school life lasts. What are we doing to discover how the school may supply the technical knowledge, skill and social understanding which the individual is just about to use in his out-of-school life? One practical way to do this is to study the free activities of the students while attending school, such as hobbies, avocations, interests, occupations, play.

Another phase of research which is practical and worthwhile is to make a careful survey of what happens to the "products" of the school. It is necessary to follow them up for at least six months to discover what

they learned in school that enabled them successfully to find a place for themselves in the post-school life, and also what they failed to learn that resulted in failure in whatever activities they engaged in after leaving school.

How many young men and young women leave the secondary schools still dependents? If the essential objective of the high school is to bridge the period of teacher-dependence with the period of self-dependence, then the school efficiency may be measured by a ratio between the independent "products" and the dependent "products," in the same way as the profitable items on a counter in a store can be determined by the "turn-over" or tendency to remain in the "stock room."

The attitudes of the teachers toward the results of the findings of research will depend to a very large extent upon the part the teachers have taken in producing those findings. Every effort possible should be constantly made to keep everyone informed as to "just what is done about it all, anyway."

The scientist is rarely ever a publicity man. There is need of a student of educational growth and development to assist the research worker in making known the value and results produced by research. This has been done very effectively by sponsoring departmental articles for the local press on the work of guidance.

It is well for the research worker to tie in on the better known results of industrial and civic research. What has research done for the protection of the food we buy in the grocery store? What has research done for the protection of the drugs we buy from the drug store? What is medical research doing to protect us from disease?

Big business applies the principles of research all the time. Is it not time that educators do likewise in counseling to produce self-dependent persons?

VI. Placement and Follow-up

Placement and follow-up are dual in nature from the educator's point of view—there is a placement and follow-up within the school which is the natural result of research and classification, and there is a placement and follow-up of the marketable products of the school.

Every teacher should think of teaching as a means of helping the individuals to find their places in life. Marketable school product is not made by merely teaching subjects as such, but rather by teaching subjects in terms of the places in life which the individuals some day will fill. The degree to which the school product is marketable in the professional and in the non-professional fields determines the degree to which all education is effective. Therefore, every teacher should be vitally concerned with helping to turn out marketable school products.

The placement and follow-up procedure should function through representatives of employers, of labor and of those community agencies interested in guidance. The dean of girls, the executive counselor and the heads of the commercial, the industrial arts and the vocational departments should have a vital part in placement and follow-up work.

To obtain the best results the heads of the departments named should have at least one meeting during each calendar month. The chief objective of these meetings should be to keep informed concerning the ebb and flow of the demand for and supply of the marketable products of the school. The members of this organization are in the best position to bring about curriculum adjustments to meet the demand on the part of employers.

Perhaps one of the most effective methods of making this study is to prepare a simple and complete objective questionnaire each year, to be sent to all the leading employers in the local community. This will serve many purposes. It will advertise the school products in a tactful, indirect way; it will create employer good-will; it will disclose the needs of the employers; it will enable the school to discover why certain products succeeded or failed.

The constantly increasing number of young people graduating from the secondary schools is forcing more and more the recognition of the biological doctrine of the survival of the fittest. What are we doing to adjust the increasing demand for workers to the changing demands of a changing world, with the largest possible number of survivals? The practical answer must be found in a counseling program with the effective application of a practical technique.

In closing, this must be said: Don't attempt to take over bodily the application of the technique described in this handbook. You should, however, find it suggestive, helpful, and practical in working out a suitable technique for your school.

CHAPTER VII.
REASONABLE OUTCOMES OF COUNSELING

I. Difficulty of Achieving Results

After a program of guidance has been worked out and put into operation, one naturally asks the question: Is it effective? At this point a word of caution should be directed not only to the community at large but also to administrators and, perhaps, even to the counselor himself. In looking for results sufficient time should be allowed to elapse on one hand, and on the other reasonable results only should be expected. So many factors enter in to prevent results or at least to modify them that even the most sanguine counselor is doomed to disappointment if he does not frankly face these factors, recognize them as obstacles, and deal with them accordingly. Just what are these obstacles? For the sake of convenience they may be listed under the following heads: *obstacles within the school itself, obstacles within the home,* and *obstacles within the community.*

1. *Obstacles within the School.* Within the school system itself there will inevitably exist at times a lack of continuity between the guidance program of the elementary school and that of the secondary. Such will be

the case especially in the smaller communities where the two schools are often under the direction of separate boards and there is no general superintendent. There will also exist very frequently a lack of continuity in the guidance program within any given school, due to the changing personnel of the faculty and the transferring of a pupil from school to school in the midst of his course. Finally, there must be taken into account the failure on the part of some members of the faculty fully to realize that in fact if not in name they stand in the position of counselor to every child under their supervision, and therefore have a real responsibility in making the guidance program effective.

2. *Obstacles within the Home.* Decidedly more difficult to cope with are the obstacles within the home. In the broken home where the parents are actually separated and are working at cross-purposes where the child is concerned, the situation is very discouraging to the counselor. Much of the "follow-up" work, so essential to the success of any guidance program, is almost out of the question because of lack of interest on the part of the parents or their conflicting opinions as to the best interests of the child. Even in the united home there are two very serious handicaps—poverty on the one hand, and the wrong attitude toward labor on the other. For instance, the proper physical development of one child may call for expert medical advice and care entirely beyond the means of the parents. Another child with unusual gifts or certain marked tendencies may need special educational advantages offered only outside of the community in which he lives and too costly for his father and mother to provide. On all sides the economic problem looms up, and often the counselor and parents together are unable to solve it in full. Moreover, in homes where money is not a question frequently another obstacle presents itself, for there has grown up the erroneous idea that all boys and all girls should go to college, that the professions are more aristocratic than the trades. In theory fathers and mothers think, perhaps, that all labor is honorable, but in practice they covet for their boys and girls the success which they believe accompanies a college education and the various professions. The best interests of the child may require the tearing down of these false standards and the building up of an appreciation of the work of the master craftsman. This is no easy task.

3. *Obstacles within the Community.* Within the community also, among many other obstacles that stand in the way of effective counseling, there are again two that are conspicuous. The one has to do with guidance along vocational lines and the other with guidance along social and ethical lines. The first is paramount during periods of financial depression and to be considered even under normal conditions. This is the problem of placement. All too often there is little of promise for the inexperienced boy or girl forced out into the world to earn a living. What is the solution? Only a serious study of economic conditions will bring forth the answer. The second of the obstacles mentioned above concerns the social and also the ethical development of the child. However carefully his development along these lines may have been considered by the counselor,

the fact cannot be ignored that the community as a whole has its way with him during many of his leisure hours. The "sensational movie" and other places of questionable amusement are ready and waiting. Whether the program of guidance mapped out may be effective or not will depend upon the extent to which any given community is alive to its responsibility to provide wholesome recreation for its boys and girls.

II. Reasonable Outcomes

With so many handicaps and counteracting influences in school and home and community, what can be the reasonable results of a guidance program? As suggested in the introductory chapter, these results may be discussed under six heads: program making, physical development, parent co-operation, social development, ethical development, and self-direction.

1. *Program Making.* It is along the line of program making that results will often be most apparent, for in this instance, on the whole, it rests with the school not only to put the program into operation but to see that it is carried out. Many of the factors contributing to its success or failure are also under the direct control of the school. Guidance in program making should insure for the child the course best suited to his tastes and needs, the course challenging his ability but not impairing his strength, and the course fostering special gifts but avoiding the narrowing effects of too early specialization. As such a procedure would necessarily eliminate misfits at the outset or bring about readjustments with the minimum loss of time there should very definitely follow:[1]

a. Better classification of pupils.
b. A decrease in number of retarded pupils.
c. A decrease in number of failures.
d. A decrease in number of pupils dropping out of school.
e. A decrease in number of absences due to causes other than illness.
f. Fewer disciplinary cases.
g. Increased pleasure and interest in school and school life.
h. Improvement in pupil morale.
i. Improvement in teacher morale.
j. Improvement in school morale.
k. A broader curriculum and a richer extra-curricular program.
l. Improvement in preparation for higher institutions of learning.
m. Improvement in training for occupations.
n. The placement of pupils in suitable employment.
o. The improvement of relationship between school and industry.
p. The improvement of relationship between school and labor.

These conclusions are supported by a recent survey made by Nicholas Ricciardi.[2] A circular letter relative to the outcomes of guidance was sent to a selected number of representative high schools in the State of California. Every principal who replied agreed with the statement that "guidance is the aspect of education which has to do with aiding each individual pupil to make his adjustments so that he may grow in the best possible way as a citizen, as a member of society, and as a worker." Returns were

[1] Hepner, Walter R., "The Counseling Function in High School," CALIFORNIA QUARTERLY OF SECONDARY EDUCATION, Vol. 1, pp. 471-475.

[2] State Department of Education, Sacramento.

received from 225 high schools, 24 of them being in rural areas. One hundred and twenty-six are senior and four-year high schools and 99 are junior high schools.

The checkings of the outcomes of educational guidance representing 126 senior and four-year high schools show that:

93% indicated the better classification of pupils as an outcome of educational guidance;
70% the improvement of school morale;
68% the improvement of teacher morale;
34% the improvement of work done by graduates in higher institutions of learning.

The checkings of the outcomes of vocational guidance representing the same 126 senior and four-year high schools show the following:

80% indicated, as an outcome, that courses of study are better suited to the occupational requirements and to the occupational interests of the pupils;
54% the improvement of the relationships between the school and industry, as an outcome;
50% the placement of pupils in suitable employment;
34% indicated an improvement of procedure for providing continuation education;
32% the improvement of the procedure for developing the co-operative education program;
30% the improvement of relationships between school and labor.

The checkings of educational guidance outcomes representing 99 junior high schools show that:

82% indicated the courses of study better suited to the needs, the interests, and the capacities of pupils:
82% the improvement of pupil morale;
72% the reduction in the number of pupils who leave school;
69% the reduction in number of retarded pupils.

The checkings of the outcomes of vocational guidance of the same 99 junior high schools show that:

69% indicated the giving of organized and up-to-date information concerning employment opportunities, as an outcome;
30% the developing of criteria for evaluating the efficiency of the non-collegiate program of education.

2. *Physical Development.* Is guidance equally effective where physical development is concerned? To answer the question fairly, it seems necessary to consider two types of health programs: one which the school not only outlines but is able also to carry out; and the other which the school, with expert medical advice, may suggest, but the home must put into effect.

In the first instance, reference is made to such simple hygienic measures as: exercise in the fresh air after study; showers after strenuous exercise; rest periods for those underweight; and certain forms of corrective gymnastics. In these cases a slight improvement in the child's general physical condition may be expected, but it does not always result because of many counteracting influences at work during the remainder of the twenty-four hours.

In the second instance, only too frequently suggestions for the child's physical welfare go unheeded because of indifference, religious scruples,

difficulty in securing expert care, and resentment at the implication that it is needed (as in certain psychiatric cases); or, as stated above, because of poverty. There are, however, many times when the counselor's suggestions are welcomed and steps taken to carry them out under the direction of school or family physician. When the counselor can go himself into the home or has at his command the services of a visiting teacher or nurse to make the personal contact, the result is especially satisfactory. Even in those cases where no immediate step is taken in the home, often much has been done to bring about the co-operation of parents with the school in the interest of the child. In other words, in gaining the co-operation of the parents, concern for the child's physical welfare is often the entering wedge. When that is manifest there is on the part of the parents, especially the mother, the first realization that the school is thinking in terms of the child's whole development.

3. *Parent Co-operation.* Parent co-operation, then, often one of the outcomes of counseling on the side of the child's physical development, becomes itself a potent factor in determining what the results shall be not only in that direction but also in the realm of educational, social, and ethical development. Rarely can any program of guidance be carried out in full without the understanding and help of the home. This point cannot be made too emphatic. Contacts frequently established with the home in as many ways as possible should go far toward determining the maximum effectiveness of any counseling program.

4. *Social Development.* As one turns to seek results along the line of social development, a somewhat different problem presents itself. It is extremely difficult to determine whether the apparent results are due to counseling itself, or to any one of a number of factors contributing to the child's growth and adjustment socially. In other words, there is no dearth of results; but to which of many causes shall they be attributed? At this time in his life the child's behavior is naturally modified by many innate tendencies: a desire to appear well before his fellows; an inclination to be observant and imitative; a dread of being different; a pride in his personal appearance. We must, at this point, be content with the results and not too insistent upon tracing them back to the exact cause.

In other parts of the social program the outcomes may be considered very definitely those of the counseling plan. More and more of the pupils will seek a share in extra-curricular activities. There will come from the pupils themselves a demand for other and more varied activities. Many will become noticeably self-possessed and at ease when given a definite service to perform. Others will welcome and participate in group discussion of problems related to their needs. More leaders will be developed. Those inclined to be too active in social affairs will have their energies turned in other directions. With school and home working together the number of organizations, both in school and out, to which the child should belong can be somewhat regulated. Thus his strength will be conserved, and his love of service fostered rather than destroyed by too frequent ex-

pression. The results from this phase of the social program are almost unlimited. Nowhere can such an enthusiastic response be expected.

5. *Ethical Development.* The most difficult of all results to determine are those sought in the realm of ethical development. Here the problem is complicated not so much by the many contributing factors as by the fewer manifestations of change or development. The results must be sought over a longer period of time, traced through a devious course, and merely glimpsed at some unexpected turn. Definitely just what are these results? There are two types:

a. Outcomes in the cases of the individual
   1. No repetition of the same offense.
   2. A definite stand on the issue involved.
   3. A reputation among his fellows for taking the right stand.
b. Outcomes in the case of the whole school
   1. A general improvement in school standards.
   2. The awareness of the pupils as a whole of the existence of certain standards generally accepted by society.

For well-rounded ethical development the help and co-operation of the home is needed most of all. The school may set up standards, draw up codes, conduct honesty campaigns; but without the endorsement of the community and the understanding and sanction of the home all these avail little. The father who lightly passes over the offense or does not object at all to the fact that his son has signed the parent's name to a note has done more harm in a second than the counselor can undo in many a day.

6. *Self-direction.* If guidance has been really effective, if the counseling program has accomplished what it has been set up to accomplish, its real and, in the end, its only valid results must be sought along the lines of self-direction. This is the goal of counseling, the justification of counseling. In the final analysis, the individual must stand alone and make his decisions in the light of past experience and present judgment. If the counselor fails here, he fails in his main task; for without the ability to direct himself how shall the individual carry on?

It is in the senior year of the high school and in the junior college that the outcomes of counseling in the field of self-direction can be most advantageously studied. This may be the last close contact between the pupil and the counselor in his official capacity. It is at this time that the student should have arrived at a certain maturity and should be expected to make important decisions, whether he is to go immediately into the world of industry or to continue his education in the university. In both cases the period of general education is drawing to a close. From now on there must be specialization. A choice must be made. After everything is said and done, with him rests the final decision. Speaking especially of junior college students who are going on to the university, one writer[3] stresses the fact that they should have attained very definitely by the end of the junior college period certain recognized types of personal independence, namely, ability to choose a vocation or profession, ability to

[3] Smith, Lewis W., "Counseling and Guidance Problems in the Junior College," CALIFORNIA QUARTERLY OF SECONDARY EDUCATION, Vol. 5, pp. 343-348.

attain scholastic independence, ability to work independently. In each instance, if the college has functioned effectively this ability will be largely the result of its program of guidance.

As time goes on it becomes harder and harder to trace results. One is no longer confronted by a lack of manifestations but rather by the problem of reading them. The information will now of necessity come from many sources quite remote from the sphere of the counselor. To know the outcomes one must keep in touch with the individual in higher institutions of learning or in the various fields of employment through some method carefully devised. Such methods are at best unsatisfactory, but with them the counselor must often be content. Occasionally, however, there has been established somewhere along the way between the counselor and the counseled that fine contact which develops into a lasting friendship destined to continue that contact without the aid of any artificial means. It is only in such instances that the results of the counseling program as a whole can be determined, and then never to one's entire satisfaction. Too much of the intangible is involved; but frequently the intangibles are more potent influences than the tangibles.

CHAPTER VIII.
CRITERIA FOR MEASURING THE EFFICIENCY OF COUNSELING

The efficiency of an organization may be measured (A) in terms of the product, and (B) by the ease with which the system produces that product.

A. Appraisal of the School Product Through Surveys and Studies

1. *Survey of California School System.* In conformity with legislation enacted during the 1929 State Legislature,[1] the Governor appointed a committee of nine lay citizens to study the State educational system. This committee, known as the California Commission for the Study of Educational Problems, in its report has compared the California school system to a large industry. It has made a careful survey of the school system, using the following technique:

The committee held fifty all-day hearings and discussions. State, county and city school officials, university and college professors, school administrators, teachers, agriculturists, labor leaders and employers of young people were interviewed. More than 50,000 post cards were sent out, asking:[2] "What, in your opinion, are the three outstanding problems of the public schools?" Ten thousand of these were sent to registered voters, chosen at random from California's fifty-eight counties; 6,500 to city, county and State officials; 1,000 to presidents and secretaries of chambers of commerce; 29,000 to members of State and local organizations of men and women interested in public affairs; and 5,000 to school teachers and school officials.

[1] California Senate Bill No. 48, 1929.
[2] Volume One, Report, California Commission for Study of Educational Problems, State Department of Education, 1931.

One of the recommendations was: "That more attention be given in elementary and high schools to inculcating thoroughness in such fundamental subjects as reading, spelling, arithmetic, penmanship, and in the correct use of English; and that definite attainment in these subjects be required before high-school graduation."[2]

Our counseling, then, should check very carefully the abilities of the students in these several fundamentals and see that proper training is given.

2. *Study of Migratory Trends of Indiana High-School Graduates.* A Study of the Migratory Trends of High-School Graduates, 1900-1930,[3] constituting 2,600 grades of Indiana high schools, shows "that the power to hold high school graduates is related to the size of the community; that when we speak of educating for life of the community it becomes a matter of dispute as to just what constitutes a community in this day of rapid transportation." This means, then, that we must look beyond our immediate vicinity in the guidance of our students.

3. *Follow-up Study of Baltimore High School Graduates.* In a follow-up study[4] of the June, 1926, graduates of three Baltimore high schools, the following procedure was used: First, return post cards were sent out to secure information from the graduates themselves. Second, letters were sent to the employers. Some of the conclusions reached were the following:

> First, certain qualities other than scholarship ability are apparently essential that the student may give satisfaction on the job. Second, the type of person making the rating, and the care with which he is likely to make it, must be given careful consideration. Third, if employers would inquire into the school records, aptitude and psychological tests, home conditions, character ratings, and appearance of the students, they would be better informed concerning the type of person they are employing. This might deter indiscriminate statements concerning high school graduates.

4. *Conclusions of Committee on Vocational Guidance, Stanford University.* The Committee on Vocational Guidance of Stanford University,[5] in speaking of the guidance work with its students, says:

> That there is need for such aid to students is shown by the fact that approximately a third of the senior class of 1927 did not know in March of that year what occupation they would enter, and a somewhat similar number had not made their decision two years later. The lack of such motivation as comes from a possibly temporary, but definite, decision regarding one's life career undoubtedly is the cause of much indifferent work in the university.

In all the above investigations, attempts have been made to arrive at the nature of the high-school graduate entering the fields of industry, commerce, and higher education. These findings are not theoretic or philosophical, but are the results of modern scientific business investigations. It is by such methods that we can arrive at the results our school system produces.

We can measure the efficiency of counseling in the guidance program by learning what happens to its output. A follow-up and research program, scientifically made and interpreted, will accomplish this.

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[3] *Phi Delta Kappan*, February, 1931. O. E. Young.
[4] Baltimore *Bulletin of Education*, March, 1927, p. 141.
[5] Stanford University *Bulletin*, Fifth Series, No. 101, November, 1930, p. 290.

B. The Guidance Program within the School

The guidance program within the school is more than an arranging of a group of subjects for the child to follow and the returning to the child a set of grades at stated times.

The behavior problem of the child must be taken into consideration and adjustments made where possible. We are dealing with human beings and not sticks of lumber.

The report which follows—a partial summary of treatment of maladjustment cases in the Rochester, New York, city schools[6]—indicates the importance of this problem.

1. *Treatment.*

a. *Child*

1	Changing attitude toward study	274
2	Changing attitude toward school	397
3	Changing attitude toward conduct	744
4	Improving habits of regularity	311
5	Improving health habits	140
6	Improving social relationships	232
7	Changing attitudes toward family	117
8	Better use of leisure time	164
9	Arrangement for home study	44
10	Building up self-respect	256
		2679

b. *School*

1	Changing attitude toward child	194
2	Better understanding of home conditions	701
3	Program adjustments	84
4	School clinics	57
5	School nurse	249
6	School doctor	74
7	Child study	153
8	Changing of school	61
		1573

c. *Home*

1	Urging medical treatment	317
2	Changing attitude toward child	257
3	Changing attitude toward school	311
4	Improving emotional atmosphere	77
5	Improving supervision	422
6	Analyzing opportunity for play	99
7	Analyzing opportunity for sleep	48
8	Analyzing opportunity for study	44
9	Analyzing opportunity for diet	42
10	Improving discipline	209
11	Family adjustment	108
12	Improving moral conduct	51
		1985

The proper treatment of the maladjustment will reflect itself in the decrease of retarded pupils, the lessening of failures, the lowering of drop-outs, the improvement of attendance, and the reducing of disciplinary cases. The efficiency of the counseling program can be measured in terms of the above data and these data are objective and not subjective.

2. *Character of Decision of High-School Graduates.* One of the most important factors of counseling is that of vocational decisions. One educator has said:[7] "If the high school is to become as serviceable as it is common, it will be necessary for it to assume a new function—the obligation which it owes to every one of its students, to guide him into the work which he will do after he leaves high school."

In its report on vocational guidance for students, the California Commission states:[2] "There is reason to believe that for thousands of high-

[6] "The Child in America," William and Dorothy Thomas, p. 261.

[7] John A. Kinneman State Normal School, Westchester, Pennsylvania, "The Wastefulness of High School Education," *Education*, May, 1927, p. 529.

school graduates who can not go to college, Commencement Day is the day on which they commence to wonder for the first time what they should do to earn a living."

The changing of this wondering attitude into a knowing attitude is a direct challenge to the guidance system, and the efficiency of counseling can be measured in terms of the number of high-school graduates knowing on Commencement Day where they are going.

3. *Necessity for Cumulative Records in Counseling Program.* No counseling program is possible without a cumulative record of the person guided at hand. One may just as well expect a physician to prescribe for a patient without first obtaining a case history as to counsel the child without definite knowledge of the child himself.

4. *Form and Content of a Cumulative Record.* The cumulative record should possess qualities similar to those set up by the Guidance Committee of Teachers and Principals of the School District of South Orange and Maplewood, New Jersey:[8]

STANDARDS FOR DETERMINING FORM AND CONTENT OF A CUMULATIVE RECORD FOR USE IN THE GUIDANCE PROGRAM IN A PUBLIC SCHOOL SYSTEM

1. The FORM of such a Cumulative Record System will be:
   a. *Durable*
      Quality of stock good enough to last through the K-12 span. (Kindergarten-High School).
      Size of stock such as will render least possibility of loss.
   b. *Usable*
      Material easily recorded thereon.
      Information easily obtained therefrom.
      Form to be an aid, not a barrier, to understanding the "whole" child.
   c. *Flexible*
      Provides for future changes on cards without upsetting whole card system.
      Provides for filing of extra material (pertinent letters, etc.) significant for understanding certain problem children.
2. The CONTENT of such a Cumulative Record System will be:
   a. *Significant and Purposeful*
      Material selected should be useful, not primarily for statistical studies, but for actual child guidance.
      Material selected should encourage teacher to become still better acquainted with children.
      Material selected should focus attention upon the child's specific abilities and attitudes, and upon a general bird's-eye view of the "whole" child.
      Material selected should be planned for all the children in the school system concerned—not primarily for extreme cases of the clinic type.
   b. *Objective*
      Where measurement is reliable, valid and significant, it should be recorded.
   c. *Subjective*
      Where measurement is *not* reliable, valid and significant, material should be frankly subjective. The integrity of the dynamic human unit, admittedly subjective, should be recognized and interpreted in frankly subjective terms.
   d. *Simple*
      Nothing, unless essential, should be recorded.
      All recordings should be as simple as they can be and still be significant.

[8] Guidance Committee of Teachers and Principals, School District of South Orange and Maplewood, New Jersey.

The efficiency of counseling can be measured in terms of completeness and usefulness of the cumulative record.

5. *Co-operation of Entire Faculty.* Regardless of the set-up of the advisory system—whether using a"home-room system," special counselor, or both—the counseling program must have the sympathetic understanding and positive assistance of the entire faculty. At some time or other, all along the line, the teacher becomes an advisor of the student. Subject-matter, important as it is, should stand second to the child. The teacher must realize that he is teaching children, not subjects. Throughout the entire system every teacher should be able to become a confidential friend of the student.

No person unwilling to subscribe to the above should enter the teaching field. The State should carefully judge its future teachers as to their abilities to counsel as well as their grasp of subject-matter before certification.

The efficiency of counseling may be measured in terms of the co-operation of the school faculty.

6. *Classification of Students.* The findings of the California Commission[2] divide the students into two classifications for counseling:

A. The counseling for the student who is preparing for higher education.

B. The counseling for the student who will enter the business or the industrial field upon graduation from high school.

In either case, the counselor must be well informed. He must have an "understanding heart" and yet be able to keep his head. Vaporous valuations and false guidance are fatal. The efficiency of counseling may be measured in terms of the counselor himself.

7. *Administrative Support.* The gathering of guidance data, the "check and double-check" of counseling take both time and money. These cannot be "a bit of extra-curricular activity" of the teacher. The time and the financial support of the administration may be a measure of the efficiency of counseling.

Conclusions

In establishing criteria for measuring the efficiency of counseling we must keep in mind objective values. Theories and philosophies may be part of our thinking, but our measuring sticks must be such that they are usable in all school systems.

The efficiency of counseling may be measured in terms of:

a. Appraisal of the school product
   1. Placement and follow-up program
   2. Number of retarded cases decreased
   3. Attendance improved
   4. Number of disciplinary cases lowered
   5. Maladjustments reduced.

b. The efficiency of the Counseling Program is affected by:
   1. The compactness and usefulness of the cumulative records
   2. The co-operation of the school faculty
   3. The expertness of the counselor
   4. The support of the school administration.

RESEARCH PROJECTS OF THE SECONDARY SCHOOL LEVEL CARRIED ON IN CALIFORNIA CITIES DURING 1930-1931

Compiled by
FRANK C. TOUTON
Chairman of Committee on Educational Research Activities

INTRODUCTION. Following the plan initiated in the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION of October, 1929, the Society's Committee on Research Activities made a request of the research departments of city school systems of California that they report to the committee the several significant research projects of their departments for the past school year. The following is quoted from a letter sent July 27, 1931, to the directors of the research departments of California city schools:

You will recall that the October, 1929, and October, 1930, numbers of the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION devoted from forty to forty-five pages to reports of research projects bearing on problems of the junior high school, senior high school, and junior college which were carried on in California during the year preceding. From many sources the research committee has been assured during the past two years that publication of these reports has been of distinct value to administrators and teachers in secondary schools. In order that a similar and complete presentation of this past year's research projects may be offered in the October QUARTERLY of this year, as is suggested by Horace M. Rebok, Editor of the QUARTERLY, it is essential that the Chairman of the Committee on Educational Research Activities receive a report of the work done under your direction.

It will make for uniformity of presentation, if each research department submits a resumé of each secondary school project under the following heads:

1. Its title.
2. The full name of the person who assumed the major responsibility for the project.
3. The department and the school grade in which the project was carried out.
4. The essential nature of the project, including type of data used and procedure carried out.
5. The findings or outcomes.

The projects to be reported may deal with problems of administration, with the curriculum, or with methods of instruction in the field of secondary education, grades 7-14 inclusive.

The value of the report as printed in the QUARTERLY will depend upon the extent to which the several research departments collaborate. The space allowed to each department will vary from 600 to 2400 words (from one to four pages of the QUARTERLY) depending on the extent and nature of the materials submitted to the committee.

Your immediate reply stating that you will collaborate will be deeply appreciated by the committee. It is suggested that reports in their final form be submitted after the pattern of the Long Beach report, page 11, or the Oakland report, page 19, or the San Francisco report, page 26, of the October, 1930, QUARTERLY. Such reports should be in the hands of the Chairman of the Society's Research Committee on or before August 25, 1931.

Anticipating your cordial and thoughtful co-operation, I am,

Faithfully yours,
FRANK C. TOUTON,
Chairman of Committee on Educational Research Activities.

Research Projects Reported

The reports received by the committee are printed below in practically the form in which they were submitted. The variety of projects undertaken reveals the alertness of the research departments to the problems in school systems from which reports have come. The reports afford valuable suggestions as to projects which may be undertaken in other schools and give brief and profitable resumés of the major research activities of research departments of California city school systems for the school year 1930-1931.

REPORT OF ALHAMBRA CITY HIGH SCHOOL

HELEN VANDERVEER HOOD, *Director of Department of Research and Guidance*

PROJECT I.

TITLE: Reading Interests of a Group of High School Pupils.

PERSON RESPONSIBLE: Helen VanderVeer Hood.

NATURE OF PROJECT: The high school counselor, when interviewing a pupil for the first time, asks that pupil a series of questions, among which is the following: "Name some books or magazines you have enjoyed." It was felt that a study of the answers which had been secured to this question might be of interest. In studying the answers to this question the group was divided on the basis of intelligence quotient.

FINDINGS: A record was kept in each instance of the number of pupils (1) who failed to answer the question, (2) who replied with the name of more than one magazine or book. A brief summary of the results is as follows:

	Below 90 I.Q.	*90-109 I.Q.*	*Above 110 I.Q.*
% of Group Giving No Reply	55	19	0
% of Group Giving More Than One Answer	11	37½	68

It may be seen by this table that there are two decided tendencies shown in the different ability groups, namely:

1. The lower the I.Q., the less the tendency to reply definitely to the question as to reading material.
2. The higher the I.Q., the greater the tendency to reply definitely to the question as to reading material.

All groups of ability preferred stories of the adventure type. This may, perhaps, be due to the fact that only 20% of the pupils interviewed were girls. In point of numbers, Zane Grey led all other authors. He was listed by pupils of all types of ability. Stories and periodicals dealing with aviation found a large following, as did magazines showing an interest in science or mechanics. Undoubtedly a portion of the replies were censored by a desire to make a good impression, but the fact that this was only one of a series of questions and that it was confidential makes it probable that a large portion of the replies may be relied upon.

PROJECT II.

TITLE: A Study of the Quality of Ability and the Grades Received by High School Pupils According to the Various Districts from Which the High School Population Is Drawn.

PERSON RESPONSIBLE: Helen VanderVeer Hood.

NATURE OF PROJECT: The high school population of over 2,000 pupils was divided into groups according to the districts from which the pupils entered the Alhambra High School. The grades received in June, 1930, were used in this study, and the median grade was found for each group in every high school subject. Intelligence quotient was also taken into consideration.

FINDINGS: Marked differences were found in the grades received by pupils from various sections of the school district. There was some significance in the fact that certain schools appeared consistently among the highest or the lowest in ranking. For example, pupils coming in from outside California were among the two highest rankings in seven different school subjects. On the other hand, among the lowest, one elementary district appeared in eight different subjects, and another in six. These cases seemed to be more than co-incidental.

PROJECT III.

TITLE: Report on Students Who Enrolled in College Preparatory Courses Against Advice of Research Department.

PERSON RESPONSIBLE: Helen VanderVeer Hood.

NATURE OF PROJECT: For approximately three years a record has been kept of the 8A pupils who enrolled in college preparatory courses against the recommendation of the Research Department. (This recommendation was based upon an extensive system of reports and records.) A total of 170 pupils were thus followed up, their present class distribution being as follows: A9, 68; B10, 43; A10, 30; B11, 26; A11, 3. A summary of the present status of these pupils is:

	Number	*Per cent*
Those who have left	28	16.5
Those who have made required recommended grades	3	1.7
Those who have failed to make required recommended grades	55	32.4
Those who have changed courses	84	49.4
	170	100.0

The figures prove very conclusively that almost none of these 170 pupils stood a very good chance of reaching college and that the Research Department was justified in advising them to go into some course other than college preparatory. The three pupils who have made the required number of recommended grades so far are at present only A9 pupils, so that it is doubtful, in view of what the remainder have accomplished, whether these three will be ready for college on finishing high school.

FINDINGS: Half of the total number (49.4%) have already changed courses (and we may assume because they did not succeed in college preparatory); one-third of the total (32.4%) who are still in college preparatory have failed to make the required number of recommended grades; one-sixth (16.5%) have left, the majority to part-time school; thus there are less than 2% who have made the required number of recommended grades.

REPORT OF THE BURBANK CITY SCHOOLS

J. MURRAY LEE, *Director of Research*

PROJECT I.

TITLE: Pupil Progress Through the Grades as Shown by Age-Grade Distribution.

PERSON RESPONSIBLE: J. Murray Lee.

NATURE OF PROJECT: The report was compiled from the Acceleration and Retardation Report required by the State for grades 1-12.

FINDINGS: Per cent of pupils:

	Grades	*Accelerated*	*At Grade*	*Retarded*
Elementary	1-6	9.9	61.2	28.9
Junior High	7-9	24.9	40.5	34.6
High School	10-12	30.6	40.7	28.7

The data seemed to indicate that:

1. There are too large a number of pupils who are retarded more than one year.
2. The individual schools are not studying as carefully as they should the proper placement of their pupils.
3. The average or retarded pupil is not being held by the junior and senior high schools.

PROJECT II.

TITLE: A Study of Departmental Costs in the Junior and Senior High Schools for a Three-Year Period.

PERSON RESPONSIBLE: J. Murray Lee.

NATURE OF PROJECT: The cost per capita for each department in Grades 7-12 was studied over the period of 1927-1930. The factors included were teachers' salaries and instructional costs.

FINDINGS: During 1929-30 the most expensive departments in the high school were: Art (most), Household Arts, and English. The least expensive were: Girls' Physical Education (least), Social Science, Music, and Boys' Physical Education. Large differences in cost which are found between some of the departments, especially English and Social Science, should not exist.

In the junior high schools the most expensive departments were: Manual Arts, Household Arts, and Modern Language. The least expensive were: Boys' Physical Education, Girls' Physical Education, and Music.

PROJECT III.

TITLE: A Study of Teacher-Load in Junior and Senior High Schools.

PERSON RESPONSIBLE: J. Murray Lee.

NATURE OF PROJECT: The study included the average teaching-load in the junior and senior high schools, the average load by departments, the teaching-load carried by each teacher, and an analysis of the extra-curricular and community activities of each teacher.

FINDINGS: The departments in senior high school ranked in order of size of teaching-load, heaviest to lightest, were: Physical Education (girls'), Social Sciences, Music, Science, English, Physical Education (boys'), Domestic Arts, Foreign Languages, Mathematics, Art, Industrial Arts, Commercial, Latin.

In the junior high, the Physical Education (girls') Department carried the heaviest load, then Physical Education (boys'), Social Science, Science, Mathematics, Music, English, Art, Foreign Languages, Domestic Arts, Industrial Arts, and Latin, which carried the lightest.

Many inequalities in the load carried by various teachers existed, both in curricular and extra-curricular activities, which could be at least partially eliminated if the principals would study the situations in their schools more carefully.

PROJECT IV.

TITLE: A Survey of the Teaching Staff.

PERSON RESPONSIBLE: J. Murray Lee.

NATURE OF PROJECT: The data for the study were collected by means of a questionnaire filled out by all the teachers in the system in Grades 1-12.

FINDINGS: The findings can best be reported by describing the average teacher found by compiling the questionnaire. In the case of sex and marital status the mode was used as a measure of central tendency instead of the mean or average.

(a) The average junior high school teacher is a single woman 29.6 years of age. She has taught 6.2 years in 2.1 school systems. She has 4.4 years of college training, a Bachelor's degree, 26 semester hours in education, and 5.2 semester hours of practice teaching. She is teaching in one field. Her field of teaching is the same as her field of training.

(b) The average senior high school teacher is a married man, 35.6 years of age. He has had 10.7 years of teaching. He is teaching in one field, the same field in which he received his training.

(c) The average secondary school administrator is a man 37.6 years of age. He has had 13.4 years of experience in 4.9 different school systems. He has 5.1 years of college training, his Bachelor's and Master's degrees. He received his Master's degree[1] from the University of Southern California. He has 41 semester hours in education with 4.6 semester hours of practice teaching. He has more professional training than any other classification in the system.

[1] Mode used instead of average.

PROJECT V.

TITLE: The Standardization of the Lee Test of Geometric Ability.[2]

PERSONS RESPONSIBLE: Dorris May Lee and J. Murray Lee.

NATURE OF PROJECT: The study was carried out in Grade 10 with the co-operation of the Mathematics Departments of the Van Nuys, San Fernando, Eagle Rock, Glendale, Hoover, and Burbank High Schools. It was conducted with the co-operation of the Burbank Research Department and not under its auspices. This study was made during 1929-30, but has not been previously reported.

Eight tests using numerical and spatial material were given to 600 pupils in six high schools at the beginning of the semester. These pupils were beginning the study of geometry. At the end of the semester an achievement test in geometry was given. By means of the multiple correlation technique, the tests giving the best prediction of success in geometry were selected.

FINDINGS: The correlation between the final battery of four tests and the geometry test was found to be 0.70. In addition, a critical score was worked out by carefully studying the results of failing pupils.

The test has sufficient validity, as shown by its high correlation with achievement and the low scores obtained by failing pupils, to prove a valuable instrument in the guidance of high school pupils.

The specific uses to which the test results can be put are as follows:

1. To determine whether or not a student should take geometry.
2. To aid in sectioning classes.
3. To determine various levels of ability within the class as an aid to instruction, in case conditions do not permit sectioning.
4. To discover, at the beginning of the term, pupils who are capable of doing exceptional work in geometry.
5. To provide a measure of the students' geometric abilities so that a teacher can tell whether poor work is due to lack of ability or to other factors which can be corrected.

REPORT OF THE FRESNO PUBLIC SCHOOLS

W. B. MUNSON, *Director of Research*

PROJECT I.

TITLE: The Effect of Certain Activities on Scholarship in the Junior High School.

PERSON RESPONSIBLE: William R. Hurley.

DEPARTMENT: Junior High School, Grades 7, 8 and 9.

NATURE OF THE STUDY: This study seeks to ascertain the relation between scholarship and the time spent.

1. In preparation of school work.
2. In extra curricular activities.
3. In work outside of school hours.
4. In sleep.
5. In unorganized activities.

FINDINGS:

1. No relation was shown between scholarship and (a) time spent in extra-curricular activities, and (b) time spent in sleep.
2. Lower scholarship was shown (a) by those who spent an excessive amount of time in work outside of school hours, (b) by those who spent an excessive amount of time in unorganized activities, and (c) by those who spent the least amount of time in study outside of school hours.
3. Boys spent more time than girls in extra-curricular activities and in paid employment.
4. Girls spent more time than boys in study outside of school and in work at home.

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[2] Lee Test of Geometric Ability, Southern California School Book Depository, Los Angeles, 1931.

PROJECT II.

TITLE: Predicting Success in Junior High School Algebra.
PERSON RESPONSIBLE: Margaret Paxton.
DEPARTMENT: Junior High School, Grade 9.
NATURE OF STUDY:

1. The correlation between the grades made in algebra by 500 pupils and their I.Q.'s was found.
2. The correlation between the grades made by 500 pupils in algebra and those made in the various 7th and 8th grade subjects was found.
3. Tables of predicted grades in algebra were made.

FINDINGS:

1. A low correlation between I.Q. and grades in algebra.
2. The highest correlation was found between grades in arithmetic and grades in algebra. However, there were so many exceptions that it is evident that no pupil should be barred from algebra on account of a low grade in any subject, not even arithmetic.

PROJECT III.

TITLE: Age Levels of Adults in Evening High School.
PERSON RESPONSIBLE: T. E. Dunshee.
DEPARTMENT: Evening High School.
NATURE OF STUDY: Ages of 690 adults were obtained by a Special device.
FINDINGS:

Average age of men—27 years.
Average age of women—33 years.
Average of both—31 years.

PROJECT IV.

TITLE: A Study of Intelligence Tests.
PERSON RESPONSIBLE: Edith Ayer.
DEPARTMENT: Elementary and Junior High School, Grades 6 and 9.
NATURE OF STUDY: A comparison of I.Q.'s obtained from Terman Group Tests given to 50 pupils in the high 6th grade and repeated with the same pupils in the high 9th grade.
FINDINGS:

1. The study shows a difference of five points or more in more than one-half of the cases tested.
2. Where this difference occurs, more than three-fourths of the pupils show a lower I.Q. in the high 9th grade than they did in the high 6th grade.
3. Conclusion. This test alone is unsatisfactory for grouping of pupils in junior high school.

PROJECT V.

TITLE: Discipline.
PERSON RESPONSIBLE: Herman E. Carlson.
DEPARTMENT: Six-Year High School.
NATURE OF STUDY: An analysis of data on cases of discipline sent to the office of the vice-principal in a six-year school of 1,300 pupils to determine

1. By whom submitted.
2. When submitted.
3. Nature of complaint.
4. Against whom.

FINDINGS:

1. Large majority submitted by a very small per cent of faculty.
2. No conclusion ready as to when submitted.
3. Great variety of complaints, ranging from trivial to serious.
4. Majority of complaints against pupils in junior high school.

PROJECT VI.

TITLE: Survey of Hearing.

PERSON RESPONSIBLE: Dr. Earl H. Coleman, Director of Health and Physical Education.

DEPARTMENT: Elementary and Junior and Senior High Schools, Grades 1 to 12.

NATURE OF STUDY: Six thousand one hundred twenty-seven pupils in grades were examined with the aid of the 4-A type of audiometer.

FINDINGS: Four hundred seventy-nine, or over 7 per cent, were found to have a loss of hearing of 12 per cent or more. About 25 per cent of these have shown some improvement after treatment by specialists.

REPORT OF THE GLENDALE CITY SCHOOLS

NORMAN R. WHYTOCK, *Director of Research*

PROJECT I.

TITLE: Report on Summer School Organization, Summer 1930.

PERSONS RESPONSIBLE: N. R. Whytock and Miss C. L. Fritch.

NATURE OF PROJECT: A study of the student enrollment, cause of summer school attendance, extent of "dropping out," teacher-load, and instructional costs of pupils in grades 1-8 attending summer school in 1930.

FINDINGS: Of 7th and 8th grade pupils enrolled at the opening of summer school, 19.5 per cent had been subject failures during the spring semester, and 58.7 per cent had received low but passing grades in June, 1930. The average A.D.A. per teacher for all grades was 12.0; instructional costs were $10.71 per A.D.A. for the six weeks' period. Between the opening and closing weeks of summer school, 17.2 per cent of pupils dropped out.

PROJECT II.

TITLE: Study of Pupil Failures in the Glendale City Schools for the School Year 1930-1931.

PERSONS RESPONSIBLE: N. R. Whytock and Miss C. L. Fritch.

NATURE OF PROJECT: An analysis of failure during the current year compared with previous years. Findings for grades 7 and 8, with an enrollment of approximately 1,900, reveal that during the fall semester 4.3 per cent of girls, 16.9 per cent of boys, or a total of 10.7 per cent of pupils failed in one or more subjects. Corresponding per cents for the spring semester were: 7.1 per cent for girls, 21.2 per cent of boys, and 14.4 per cent of the total enrollment.

FINDINGS: Subjects most commonly contributing to failure are English, Spelling and Arithmetic. Per cents of pupils failing in these subjects during the spring semester are: English, 8.1 per cent; Spelling, 4.2 per cent; Arithmetic, 4.1 per cent.

PROJECT III.

TITLE: Handwriting Survey, Grades 3-8.

PERSONS RESPONSIBLE: N. R. Whytock, Miss C. L. Fritch, Mrs. I. O. Celeen.

NATURE OF PROJECT: To determine extent of improvement in handwriting since 1926, when vigorous supervision of this subject was introduced in Glendale, and to determine the numbers of pupils in grades 7 and 8 no longer in need of formal handwriting instruction.

FINDINGS: Penmanship specimens collected during the week of May 4-8 were evaluated with the Ayres Measuring Scale for Handwriting, Gettysburg Edition. Findings in grades 7-8 show, for a total of 1,725 pupils, a substantial improvement in quality but no improvement in rate of handwriting compared with accomplishments in 1926. Approximately two-thirds of pupils entering the low 7th grade produce a quality of penmanship of sufficient merit to justify discontinuing their formal class instruction.

REPORT OF THE LONG BEACH CITY SCHOOLS

ERNEST P. BRANSON, *Director of Department of Research*

PROJECT I.

TITLE: A Report on the Stephens College Experimentation in Orientation Courses in Long Beach in 1929-1930.

PERSONS RESPONSIBLE: David Segel; S. L. Brintle, Counselor-Registrar, Long Beach Junior College.

NATURE OF PROJECT: This report compares the results on tests given to classes taking orientation courses in social studies and humanities and to regular classes in high school and junior college.

FINDINGS: This comparison shows that the experiment as set up is inadequate to show differences between the achievements of pupils taking orientation work and those taking regular work. There were six cases of excess of gains and six cases of deficiencies of gains of the experimental groups, *i. e.*, those groups taking the orientation courses, over the control. In the social studies groups the excesses of gains of the experimental groups were all in the high school and deficiencies in the junior college. In the humanities groups the excesses were all in the junior college and the deficiencies in the high school. The factors at work which make for this difference of success in the two levels of school work are not revealed by the data in the experiment. If it were not for the fact that the experimental groups in both high school and junior college did measurably better in Stephens College tests we would be in a position to say that the courses were distinctly adapted to different levels of school work. Under the circumstances the most probable explanation lies in the fact that the control groups in the high school were not true control groups but groups taking the traditional high school and junior college course. The control groups differ therefore in the subject-matter they were taking, and it seems probable that the traditional courses that were being taken in the high school were better adapted to the content of the standardized test in the social studies than they were to the content of the standardized tests in the humanities. In the junior college just the reverse adaptation seems probable.

PROJECT II.

TITLE: An Inventory of Secondary English Usage.

PERSONS RESPONSIBLE: Dora D. Stoker and David Segel.

NATURE OF PROJECT: The Long Beach Inventory Test of English Usage was constructed out of those usages of English which have been found necessary in the expression in speech and writing of most people. These usages are, in the main, those which are taught in the Long Beach junior high schools. The test was administered to 6,132 pupils in grades 7 through 14.

FINDINGS: A study of results brings out the following points: Girls surpass boys in achievement. There is a steady improvement grade by grade in each of the five parts of the test, although the improvement is markedly less in the two upper grades. The reliability coefficients indicate that the test is reliable for both group and individual measurement.

The administration of the test to a number of evening school classes of adults studying a variety of subjects shows the average of the group to correspond closely to that of the 9th grade. Its administration to a group of young people, nearly all of whom are recent high school graduates, shows their average to correspond closely to that of the 12th grade. That the variability of this group is less than that of any high school group and that their lowest score is twelve points higher than in the 12th grade of the high school indicate that the elimination of errors has been carried out more successfully in this group than in any grade of the public schools. The results raise the same question as did the Mathematics Inventory Test of last year, namely, must not provision be made either at stated intervals or at the close of the senior high school course for a review of the fundamental skills which have not been fixed at an earlier level?

PROJECT III.

TITLE: Teachers' Vacation Reports for 1930.

PERSON RESPONSIBLE: David Segel.

NATURE OF PROJECT: This report gives the activities engaged in by the teachers of Long Beach during the summer of 1930. It classifies the certificated employees as elementary, high school, or junior college teachers, and administrators and supervisors, and shows the relative occurrence of various types of vacation activities for the different groups.

FINDINGS: Combining all groups, we find that 22½ per cent attended school, 4 per cent taught, 4 per cent worked as playground supervisors, 1 per cent acted as librarians, 4 per cent did other work, 28 per cent traveled, and 36 per cent remained at home without engaging in any specific activity outside the home. Of the ones who attended school over half (135 out of 258) were enrolled at the University of Southern California, and 56 at the University of California at Berkeley and Los Angeles. The students at summer school earned 1260 semester credits.

PROJECT IV.

TITLE: Analysis of the Record of Acceleration and Retardation Made on March 1, 1930.

PERSONS RESPONSIBLE: E. P. Branson and Dora D. Stoker.

NATURE OF PROJECT: The distribution of public school pupils on an age-grade basis for 1929-30 was compared with that of 1926-27.

FINDINGS: On March 1, 1930, there were 23,006 pupils enrolled in the Long Beach schools, distributed as follows: grades 1-6, 12,657; grades 7-9, 6,033; grades 10-12, 4,316.

In the three-year period, the senior high schools had increased their enrollment 30 per cent as against 20 per cent in the junior high schools, and 13 per cent in the elementary schools. This is taken as evidence of increased holding power of the senior high schools. The data are analyzed by grades and by segments. It is shown that acceleration is virtually complete at the end of the elementary school, and that retardation decreases in the senior high school, probably because of dropping out of pupils from the senior high schools. The usefulness of acceleration is discussed.

PROJECT V.

TITLE: An Investigation of the Objective Factors Which May Be Used in Homogeneous Grouping or the Prediction of Success in Individual Subjects in Junior and Senior High Schools.

PERSON RESPONSIBLE: David Segel.

NATURE OF PROJECT: This investigation will attempt to ascertain the best methods of homogeneous grouping in subjects in junior and Senior high schools by a study of the literature on the subject and by direct investigation. The direct investigation will make use of test results and teachers' marks in establishing means of predicting future accomplishments in the different subjects.

PROJECT VI.

TITLE: Mathematics Curriculum Surveys.

PERSONS RESPONSIBLE: Dora D. Stoker, David Segel, Lilah Gertrude Thompson, and Leslie J. Nason.

NATURE OF PROJECT: Three surveys will sample the problem-solving ability of pupils in grades 7-14. The results will be analyzed by the committee which is formulating a unified mathematics course for secondary schools.

PROJECT VII.

TITLE: Construction of Tests to Be Used in the Ninth Grade Junior Business Training Course.

PERSONS RESPONSIBLE: Dora D. Stoker and the teachers of Junior Business Training.

NATURE OF PROJECT: From questions submitted by the junior high school teachers of the course the Department of Research is constructing tests to be used at the close of certain units of work.

PROJECT VIII.

TITLE: N. E. A. Report on Class Size.

PERSON RESPONSIBLE: Hosea A. Whiteneck.

NATURE OF PROJECT: This study was prepared in response to a request sent out from the National Education Association. The data are based on pupils belonging December 31, 1930.

FINDINGS: The median number of pupils in average membership in the kindergarten for a total of fifty-five classes is 35.7; in the elementary schools, grades 1 to 6, for a total of 442 classes the median is 29.5; for a total of 1,497 classes in the junior high schools the median is 30.9; and for 844 classes in the senior high school the median is 30.3.

REPORT OF LOS ANGELES SECONDARY SCHOOLS RESEARCH ACTIVITIES AND PROJECTS, 1930-1931

ELIZABETH L. WOODS, *Director Psychology and Educational Research Division*

(A limited number of copies of the issues of the *Los Angeles Educational Research Bulletin* referred to in the following abstracts are available for distribution to persons who may be interested in reading the complete articles.)

PROJECT I.

TITLE: Textbook Adoption and Evaluation Procedures, Los Angeles Secondary Schools.

PERSON RESPONSIBLE: M. E. Herriott, Assistant Director, Psychology and Educational Research Division. See: *Los Angeles Educational Research Bulletin,* Vol. 10, No. 2, October, 1930, pp. 1-21.

NATURE OF THE STUDY: During the past few years, techniques for analyzing and evaluating textbooks have been developed by Los Angeles curriculum workers. The first article in the bulletin above mentioned outlines the adoption and evaluation procedures, step by step. Before textbooks are recommended for adoption, all books considered for any subject are examined critically and described in objective terms, so that valid comparisons can be made and the relative merits of the several books determined. This objective information contains information relative to subject-matter, language, learning exercises, and format. Statements are also given of the educational point of view of the authors, and the psychology of learning implied by the organization and presentation of the material in the books under consideration.

In the bulletin some of the details in the procedures for specific evaluations are given. The subjects included are Geometry, General Science, and Physics. In addition to these subjects, textbooks have also been evaluated, during the past few years, for Latin, Junior High School Mathematics, Chemistry, General Mathematics, Guidance and others.

PROJECT II.

TITLE: Vocabulary Grade Placement of Typical Newspaper Content.

PERSON RESPONSIBLE: Alfred S. Lewerenz, Statistician, Psychology and Educational Research Division. See: *Los Angeles Educational Research Bulletin,* Vol. 10, No. 1, September, 1930, pp. 4-5. See also: *Los Angeles Educational Research Bulletin,* Vol. 9, October, 1929, pp. 8-11.

NATURE OF STUDY: This study was undertaken to secure some idea as to the vocabulary difficulty of certain basic types of reading material.

It was felt that since newspapers are widely read by people of all ages that certain portions of their content would offer a means of estimating the difficulty of basic reading matter. With a knowledge of the reading comprehension required for these basic materials it should be possible to estimate whether a given textbook, whose difficulty is known, is too easy, just right, or too hard for the purpose for which it was designed.

FINDINGS: The grade placements secured for the several representative types of reading matter found in the daily newspapers seem to support the following observations:

1. Definite strata of difficulty exist within the content of a newspaper.
2. The wording of comic strips and accounts of murders represent the simplest elements of the non-advertising content.
3. Editorials written for a newspaper popular with the working class are formulated at a level at least two years below the editorials prepared for a daily subscribed to by the professional and employing classes.
4. Writers whose comment on politics and world news is popular with the public seem to simplify their subject-matter.
5. The two simplest types of news material, murder stories and sporting news, concern events which appeal to primary and elemental interests.
6. Local news appears to fall at the mid-point in the range of reading difficulty.
7. Telegraph news is made up in large part of items written with a fairly difficult vocabulary and employing a large variety of words.

PROJECT III.

TITLE: Science Interests.

PERSON RESPONSIBLE: Charles H. Nettels, Assistant Director, Psychology and Educational Research Division. See: "Science Interests of Junior High School Pupils," *Science Education*, Vol. 15, No. 4, May, 1931, pp. 219-224; also "Science Topics that Are of Interest and Use to Adults," *Science Education*, Vol. 15, No. 3, March, 1931, pp. 139-144; also "Pupils' Reactions to General Science Courses," *Los Angeles Educational Research Bulletin*, Vol. 11, No. 1, September, 1931.

DEPARTMENT: Junior High School.

NATURE OF STUDY AND FINDINGS: Two studies have recently been made to ascertain the science interests of junior high school pupils and their parents. For the first of these studies, approximately 1,000 pupils equally divided among 7th, 8th and 9th grades were asked to state their chief interest in things scientific. No clues or suggestions as to what was desired were included in the directions. The results were segregated by sex and by ability groups. In all, 178 different scientific interests were listed by the pupils. The dominant science interests for the group of boys, in order of their popularity, were found to be chemistry, electricity, animal life, aviation, radio, the earth, minerals, mechanics, and the human body. For girls the chief interests were animal life, plant life, stars, human body, insects, the earth, flowers, chemistry, astronomy, and electricity. Five of these topics are common to both sexes. Significant differences in interests were found among the several ability groups.

The second study made use of a check list containing twenty-nine science subjects or topics. Technical words were avoided in the list. Children took the forms home for their parents to check those items of most interest and use to them. Approximately 1,000 parents returned the lists. The ten chief interests, in order of popularity, were found to be aviation, electricity, human body, radio, mechanics, agriculture, food, hygiene, chemistry, disease, and astronomy. The ten topics considered of most use were electricity, food, mechanics, agriculture, water supply, human body, hygiene, radio, chemistry, and aviation. It is seen that nine of the topics are common to the two lists. Additional study was made to determine the differences expressed by men and women, and differences between those having and not having at least a high school education. Aviation, human body, and radio interested all of the groups, while electricity, food, and agriculture are deemed the most useful topics by all groups.

The writer sought and gained permission to question 100 pupils in three 12th grade chemistry classes regarding their reactions to the junior high school science courses. The pupils were asked to state in their own words the value of the early science courses and to indicate what improvements, if any, might

be made. The results showed that girls were more critical of general science offerings than were boys. At the same time the girls were interested in more different science topics than boys. About ten per cent of the pupils felt that the general science course was too broad or abstract, while two others believed that there was too much of the lecture-type of work. Twenty per cent of the pupils made an analysis of the value of general science which had some merit. This study proved, to the writer at least, the great possibility of obtaining help on course of study problems from pupils.

PROJECT IV.

TITLE: Utilizing Adolescent Interests.

PERSON RESPONSIBLE: Mabel C. Hermans, Research Assistant, Psychology and Educational Research Division. See: *Los Angeles Educational Research Bulletin*, Vol. 10, No. 8, May-June, 1931, pp. 2-29.

DEPARTMENT: Junior High School.

NATURE OF THE STUDY: In order to ascertain adolescent interests in several fields of activity, as a basis for the selection of content in the revised course of study in junior high school English, a research study was carried on involving nearly 2,000 pupils in twenty junior high schools. A questionnaire was administered, the purpose of which was to discover data on two dominant interests, namely, (1) children's general life interests, and (2) their reading interests.

FINDINGS: From the data collected and interpreted, the following conclusions on the two types of interests were drawn: Junior high school adolescents have many different interests in club activities, leisure-time activities, school activities, and vocational activities. These general interests are highly varied among boys and girls of the same intelligence levels and age levels.

The activities that hold the greatest interest for junior high school adolescents are the following: Taking part in sports, making things, reading, working at home and at one's job away from home. These are only a few of the interests listed. Many of the boys and girls, however, find but little interest in these activities. It is apparent, therefore, that junior high school adolescents are like adults in that they are motivated by widely divergent interests and cannot be made to possess the same dominant interests.

Most junior high school adolescents have dominant reading interests which are confined largely to the following types of books: Adventure stories, animal stories, biography (the adventures of great men and women), fairy tales, myths, legends, humorous stories and tales, informational material, mystery stories, school stories, stories of boys and their activities, stories of girls and the home, romance (older boys and girls). Among children of the same intelligence levels and age levels, reading interests vary greatly. Books that are favorites with some are disliked heartily by others. Among boys and girls reading interests are highly varied.

Poetry is disliked fairly constantly by junior high school adolescents. It would seem, from the titles listed, that most of the modern narrative poetry that the children might like had not been presented to them, for no such titles were listed as favorites or as disliked poems. The same is true of much of the good in modern juvenile literature.

Junior high school pupils have dominant interests in magazine and newspaper reading. In the newspaper the children have greatest interest in the "funnies." In fact, this section of a paper is favorite by all odds.

Finally it was established that, in general, junior high school adolescents have worthwhile interests, interests that can make them happy and worthy members of society. The difficulty is that the mental food the children use in nourishing these interests is not always good. The responsibility of the junior high school is to give each child the experiences that will make his dominant interests valuable and will arouse new interests.

PROJECT V.

TITLE: Penmanship Ability of Secondary School Pupils.

PERSONS RESPONSIBLE: A. E. Bullock, Director of Commercial Education; M. E. Herriott, Assistant Director, Psychology and Educational Research Division; and F. J. Weersing, Professor of Education, University of Southern California.

DEPARTMENT: Grades, Junior and Senior High Schools.

NATURE OF STUDY: The committee on penmanship of the Commercial Subject-Field Curriculum Committee undertook a survey of penmanship.

FINDINGS: The results, which are based upon the scores of 6,181 pupils, may be summarized as follows: Soon after pupils enter junior high schools there is a decided drop in handwriting efficiency. The quality of writing is far below the norm as given on the Ayres' Scale and below practical standards set up by investigators. The quality of the girls' writing is superior to that of the boys at all levels. The poorest quality for boys is in the A7 semester and for girls in the B8 semester. The quality achieved in the A6 semester is not again reached until the B10 semester. Quality of handwriting improves throughout the high school, probably due to the elimination from school of pupils who write most poorly.

PROJECT VI.

TITLE: Art Ability of Japanese Children.

PERSONS RESPONSIBLE: Gladys Bond and Alfred S. Lewerenz, Statistician, Psychology and Educational Research Division.

This study was carried out in co-operation with Dr. Edward K. Strong, Jr., Professor of Psychology in the Graduate School of Business at Stanford University.

NATURE OF THE STUDY: It is part of a program to determine the vocational possibilities of Japanese.

FINDINGS: A summary of the study indicates that Japanese children are able to compete on equal terms with typical pupils on a standardized test of art ability. The Japanese revealed marked ability in recognition of proportion and visual memory. The older pupils had comparatively high interests in art, as shown by a knowledge of the technical terms involved in art work. The older Japanese pupils gave evidence of possessing a considerable fund of originality.

PROJECT VII.

TITLE: Orientation Test.

PERSONS RESPONSIBLE: Alfred S. Lewerenz, Statistician, Psychology and Educational Research Division, and Harry C. Steinmetz, San Diego State Teachers College.

NATURE OF THE STUDY: The Orientation test is an attempt to measure progress toward some of the ultimate goals of education. The test is diagnostic in that the beliefs conditioning attitudes have been classified according to the seven objectives of education.

The content of the test is made up of true items which comparatively few people believe and doubtful and false statements which many people accept. In form it is on the order of a true-false test of 475 items. The material is so divided that it can be administered in one to nine sittings.

FINDINGS: Individuals who hold responsible positions receive high scores, while delinquents come at the other end of the scale of performance. A use of the test is to discover those high school and college students who would be benefited by a course in science or mathematics as an antidote for superstition, jumping to conclusions, and credulity.

REPORT OF OAKLAND PUBLIC SCHOOLS

R. E. RUTLEDGE, *Director of the Department of Research*

RESEARCH STUDIES CARRIED ON UNDER THE DIRECTION OF THE DEPARTMENT OF RESEARCH

PROJECT I.

TITLE: Studies in Some Phases of Teaching Foreign Language in Some of the Oakland Public Schools.

AUTHORS: T. I. Lavrischeff and R. E. Rutledge.

NATURE OF STUDY: This study was a survey of the teaching personnel and enrollment in foreign languages in the high schools of Oakland, California.

FINDINGS: The study shows that teachers of foregn languages are well qualified, 88 per cent of them teaching their college majors or minors. The average length of teaching experience is 10½ years. Analysis of enrollment shows that a few advanced courses are taught with two classes in the same room, but that this tendency to multigrade classes is dying out.

PROJECT II.

TITLE: Equipment Standards for General Science, Grades 7, 8 and 9.

AUTHORS: Arnold Joyal and R. E. Rutledge.

NATURE OF STUDY: To revise the present furniture and equipment standards for general science classrooms.

FINDINGS: Through personal interview with all of the teachers in general science and the use of check lists for the analysis of teaching method and present use of instructional equipment, data were collected pertinent to the problem. Teachers were almost unanimous in requesting that general science classrooms be remodeled to conform to the following specifications:

"A room with a large teacher demonstration table connected with water, gas and electricity, in the front of the room; thirty-two tablet arm chairs fastened in units of four immediately in front of the demonstration table; four flat top laboratory tables with gas and electricity (no water) behind the table arm chairs; a long bench with four sinks, water, gas and electricity along one side of the room; adequate cupboard, tackboard and blackboard space on the other side of the room."

An analysis of the use of instructional equipment revealed that items furnished in quantities of one per pupil or thirty-two per laboratory were not being used in these amounts and in general that the allotment of four to eight units per laboratory instead of thirty-two would be sufficient, since laboratory work is carried on in groups rather than individually.

PROJECT III.

TITLE: Report on Professional Study of Teachers and Principals of the Oakland Public Schools for the Year Ending December 31, 1930.

AUTHOR: R. E. Rutledge.

NATURE OF STUDY: All members of the certificated staff of the Oakland Public Schools are asked to fill out annually a statement of university work carried on during the year and a brief statement of travel, professional reading, organized professional, vocational, social, and recreational activities.

FINDINGS: 70.2 percent of all of the classroom teachers had carried on university or college work during the year. More than 50 per cent reported participation in club activities and more than 40 per cent participation in organized professional activities, such as course of study work, original contributions to education, reading circles and discussion groups, and demonstration work.

PROJECT IV.

TITLE: Oakland Classification Test in Spanish, Part I.

AUTHORS: Miss Irene Hurley, Mrs. M. D. Innes, Miss Amy Myers, and C. C. Grover.

NATURE OF STUDY: It is planned to construct a test for measuring achievement in Spanish I, II, III, and IV, based upon the Oakland Course of Study in Spanish. The test is to consist of three parts, namely, Comprehension, Vocabulary, and Grammar.

RESULTS: The Comprehension test has been completed and was used last spring as a partial basis for the placement of pupils transferred from junior high schools to senior high schools. This section of the test has three forms with an average reliability of 0.88.

PROJECT V.

TITLE: Oakland Classification Test in French.

AUTHORS: Mrs. Belle Bickford, Miss Fay Chalmers, Miss Vera Miller, and C. C. Grover.

NATURE OF STUDY: It is planned to construct a test for measuring achievement in French I, II, III, and IV, based upon the Oakland Course of Study in French. The test is to consist of three parts, namely, Comprehension, Vocabulary, and Grammar.

RESULTS: The Comprehension test has been completed and has an average reliability of 0.88.

PROJECT VI.

TITLE: Oakland Arithmetic Tests for Grades 3 and 4.

AUTHORS: Miss Regina Kent, Mrs. Esther Peterson, and C. C. Grover.

NATURE OF STUDY: The test was constructed, based upon the Oakland Course of Study in Arithmetic, for measuring achievement in arithmetic in grades 3 and 4. It consists of three parts: a test in fundamentals, a test of vocabulary, and a test of reasoning.

RESULTS: The test was constructed in three forms and has an average reliability for grade 3 of 0.92 and for grade 4 of 0.88.

PROJECT VII.

TITLE: Report of Cafeteria Survey Committee.

AUTHORS: C. C. Grover, May E. Davis, and Committee.

SCHOOLS INVOLVED: Castlemont, Chabot, Claremont, Elmhurst, Emerson, Frick, Garfield, Hamilton, Hoover, Lafayette, Lakeview, Laurel, Lazear, Lockwood, Lowell, McClymonds, Montclair, Piedmont Avenue, Prescott, Oakland, Roosevelt, San Leandro, Stonehurst, Technical, Washington, Westlake, Wilson, University, Bret Harte.

NATURE OF STUDY: By personal visits to the various cafeterias, conferences with the managers, questionnaires, and a study of the monthly and yearly reports on file, information was collected concerning the various phases of cafeteria management in the Oakland schools. A set of principles by which the efficiency of the administration of school cafeterias might be checked was agreed upon and presented to the various persons concerned.

FINDINGS: It is believed that, as a result of the study, cafeterias in the Oakland Public Schools are serving better the children of Oakland.

PROJECT VIII.

TITLE: Evaluation of the Effectiveness of Certain English Courses Given in Oakland High Schools in Relation to Freshman Scholarship Achievement.

AUTHOR: J. Frederic Ching.

NATURE OF STUDY: The purpose of the study was to evaluate the effectiveness of such specialized courses as Dramatic Arts, Journalism, and Public Speaking as taught in Oakland high schools in relation to freshman scholarship achievement at the University of California. The criteria of "effectiveness" were those established by the university, viz., (1) grade in freshman English, (2) general scholarship record, (3) plus and minus ratings of pupils as given by the University at the end of the first six months of work, and (4) grade in Subject "A." (Subject "A" is a test in English given by the university to all entering students. It is a written examination devoted largely to composition.)

All students graduating from Oakland high schools during the past six semesters were classified into three groups, as follows:

Group A. Those who had eight semesters of composition and literature—the "control" group.

Group B. Those who had six semesters of composition and literature and two semesters of specialized English courses.

Group C. Those who had five semesters of composition and literature and three semesters of specialized English courses.

FINDINGS: While the number of cases used in each group does not give statistical reliability, it was found that:

1. Those students electing to take the specialized English courses were, on the average, seven or eight points higher in I.Q.
2. When Groups A and B are equated as to I.Q.:
   (a) 86 per cent of Group A passed Subject "A," while only 76 per cent of Group B passed Subject "A."
   (b) The average freshman scholarship record is slightly in favor of Group A.
   (c) The average mark received in freshman English is slightly in favor of Group B.
   (d) The percentage of pupils receiving plus ratings from the university is slightly in favor of Group B.

List of Reports Issued by the Department of Research

Low 10th Grade Scholarship Report for term ending December, 1930.
Follow-up Report of High School Graduates, dated June, 1930.
Follow-up Report of High School Graduates, dated December, 1930.
Report on Holding Power of Oakland Public Schools, 1930-31.
Results of Experiment in Predicting Success in First-Year Algebra in San Leandro and Westlake Junior High Schools.
Results of Stanford Achievement Reading Test and National Intelligence Test in the H6 Grade, Spring Semester, 1930.
Report on Results of Kuhlmann-Anderson Intelligence Test and the Stanford Achievement Reading Test in the H6 Grade, Fall Semester, 1930.
Report on Results of Primary Group Intelligence Test, Fall Semester, 1930.
Report on Results of Primary Group Intelligence Tests, Spring Semester, 1931.
Report on L3 Grade Mental Test, Fall Semester, 1930.
Report on L3 Grade Mental Test, Spring Semester, 1931.
Report on H8 Grade Mental Test, Fall Semester, 1930.
Report on H8 Grade Mental Test, Spring Semester, 1931.
Results of Columbia Research Bureau Plane Geometry Test given in the H10 Grade, Oakland, California, December, 1930.
Report on a Survey of the Work of Textbook Clerks.
Report on Indoor and Outdoor Areas Required to Carry on the Oakland Public Schools Physical Education Plant.

RESEARCH STUDIES CARRIED ON BY MEMBERS OF OAKLAND TEACHING STAFF UNDER THE DIRECTION OF THE DEPARTMENT OF RESEARCH

PROJECT I.

TITLE: The Function of the Senior High School Home Room in the Guidance Program of the Oakland Public Schools.

AUTHOR: William F. Elder.

NATURE OF STUDY: A survey of the guidance practices in the senior high schools was made by the use of questionnaires and interviews. Administrators, counselors, and home-room teachers were contacted.

FINDINGS:

1. Social guidance, an assumed home-room objective, receiving little attention in the guidance program.
2. Home rooms used largely for administrative purposes.

RECOMMENDATIONS:

1. Home room will not succeed without a real understanding of and belief in home room by both students and teachers.
2. A period of sufficient length required each day, providing a flexible arrangement for social guidance activities: home room, clubs, assemblies, class meetings.
3. Home-room meeting should be social in nature.
4. Grade counselor and home-room teachers of grade should work together to develop a guidance program for the grade.

PROJECT II.

TITLE: Work Sheets and Textual Helps Paralleling the Course of Study in Architectural Drawing I.

AUTHOR: Ralph C. Sisson.

NATURE OF STUDY: This study was made to supply the need of practical, authentic reference material in a field not covered by published texts, which are eastern publications showing eastern practice which differs in important essentials from that of the Pacific Coast. Paralleling the course of study, the work sheets at once serve as an interpretation of that course of study and as an equalizing agency in the offering of the subject throughout the system. The material offered is largely drawn from personal architectural experience modified by a careful review of available literature.

FINDINGS: The Work Sheets and Textual Helps seem to have been favorably received by the students and those instructors who have reported on them. It is intended that this nucleus be added to from time to time, thus making it more richly useful.

PROJECT III.

TITLE: Course of Study in Office Training, Typing Section, Senior High School.

AUTHOR: Wert E. Moore.

NATURE OF STUDY: To determine content, practices, and procedures of most value in training young people in the performance of office duties.

FINDINGS: A list of traits and activities of office workers of secondary school level checked by business offices, teachers of office training in Oakland, and fifteen other cities is correlated with the findings of similar surveys conducted in Cleveland and Philadelphia. On the basis of these tabulations, traits and activities are ranked, according to frequency, from highest to lowest. Each activity is set up as a problem and the sources of instructional and practice materials are provided.

PROJECT IV.

TITLE: Cost of Communicable Diseases in Oakland Public Schools During 1929-30 Through Loss of State Apportionment Funds.

AUTHOR: T. W. McFadden.

NATURE OF STUDY: Analysis of data relative to school days lost, A.D.A., and monetary loss due to contagious diseases in the Oakland Public Schools during the school years 1929-30 and 1930-31.

FINDINGS: The study shows the wide fluctuation in the number of cases of various diseases and the amount of monetary and average daily attendance loss.

Example: In 1929-30 the number of cases of measles was 2,539, while in 1930-31, the number of cases was only 769; in 1929-30, the number of cases of mumps was 1,519, while in 1930-31 the number of cases was only 443.

The total average daily attendance units lost in 1929-30 was 329; in 1930-31, 161.6. The monetary loss in 1929-30 was $20,167.97; in 1930-31, $9,720.00.

PROJECT V.

TITLE: Differences in Techniques Required in the Teaching of Large and Small Classes in the Senior High Schools.

AUTHOR: Vibella Martin.

NATURE OF STUDY: One unselected larger class of fifty pupils and one unselected smaller class of twenty in Low 10 English were utilized during each of three

succeeding semesters. A commercial student clerk worked three hours a day to assist the teacher and the larger class.

FINDINGS:

1. A democratic school background of healthy social interests, attitudes, and control are essential.
2. Pupil achievement is governed by factors other than class size in Low 10 English.
3. Creative activity, enthusiastic response, and self-direction prevail.
4. Groups are used not for administrative routine but for social, expressive experiences, just as in smaller classes.
5. A superior clerk can perform many duties *in* the class as well as out of it.

PROJECT VI.

TITLE: Differences in Technique Required in the Teaching of Large and Small Classes in United States History and Government.

AUTHOR: Rhoda McRae.

NATURE OF STUDY: To discover the techniques best suited to large classes. Five classes of fifty-one each were organized, one fast and four medium sections. The project is now in its second semester.

FINDINGS:

1. The techniques most useful have been:
   (a) The teacher.
      1. Secure the goodwill of all the students.
      2. Exhibit a sympathetic understanding of each student.
      3. Diagnose individual problems and point out a remedy for each.
   (b) The student.
      1. Assume responsibility for all activities.
      2. Must "will-to-do."
2. The techniques used in teaching history have varied from time to time. This second semester opens with a new attack.
3. Equipment used:
   (a) Library in the classroom.
   (b) Classroom lantern and slides.
   (c) Work tables.
   (d) Visual material for walls: maps, charts, pictures.
4. A full-time civil service clerk is assigned to assist the teacher.

COURSE OF STUDY MATERIALS ISSUED DURING THE YEAR 1930-1931

Printed

Home Mechanics Job Sheets.
Handbook on Attendance, Child Accounting, and Permits to Work.
Handbook on Placement.
Costume History.
No. 127—Visual Aids and Projectors.
Rules and Regulations for Oakland Athletic League.
Arithmetic Work Books I, II, III, IV, V, VI, VII, VIII.
Chabot Observatory Bulletin.
Physical Education for Senior High School Girls.
Printing Costs and Estimating.

Mimeographed

No.107S—Visual Aids for Social Studies, Grades 5 and 6.
No. 7—Junior Business Training.
No. 112—Salesmanship, Grades 11 and 12.
Clothing Work Sheets.
Electrical Work for Continuation Schools.
Foods II—Italian Cookery; Norwegian, Swedish, Danish Cookery; Irish Cookery; Russian Cookery.
No. 128—Visual Aids for Social Studies.
Textual Helps for Architectural Drawing.
Boys' Foods, Senior High Schools.

Tentative

Tentative Outline, Mechanical Drawing Course of Study.
Tentative Outline of Proposed Course of Study in German.
Tentative Outline of Proposed Course of Study in Latin.
Tentative Outline of Proposed Course of Study in General Science, Grades 7, 8 and 9.
Tentative Mathematics Courses:
Barber Mathematics, L7 Grade.
General Mathematics, 9th Grade.
Mathematics for Senior High School.
Algebra I.
Tentative Outline of Proposed Course of Study in French for Junior and Senior High School.
Tentative Outline of Proposed Course of Study in Spanish for Junior and Senior High School.
Tentative Outline of Course of Study in H7 Arithmetic.
Preliminary Outline of Proposed Course of Study in Algebra II.

REPORT OF THE SACRAMENTO CITY SCHOOLS

JAMES F. BURSCH, *Director of Department of Research and Student Personnel*

PROJECT I.

TITLE: Predicting Success in the Study of Chemistry.
PERSON RESPONSIBLE: James F. Bursch, Director, Department of Research.
DEPARTMENT: Senior High School.
NATURE OF PROJECT: A composite index for predicting success in 11th grade chemistry was made by reducing Terman Group Test I.Q.'s, average marks earned in 9th and 10th grades in algebra, geometry and English each to percentile rank equivalents and then averaging them for 162 students electing chemistry. The Powers Chemistry Test (Form B) was used as the criterion of success. This was given at the close of the semester and the scores reduced to percentile rank. A comparison was then made between the prediction and the outcome.
FINDINGS: Between average predicted percentile rank and percentile rank on the Powers Test, a Pearson r of .41 plus or minus .04 was obtained. The prediction was more significant, however, than the coefficient would indicate if the extremes of the distribution were examined. This is mentioned since the purpose of the prediction was for counseling. Of the 20 individuals whose predictive index was below the first quartile, 15 were in this group on the Powers Test. Of the 31 whose predictive index was about the 80 P.R., 17 reached a similar rank on the Powers Test while 25 of the 31 reached the 60th P.R. The weakness in prediction resulted from a number whose predictive index was high but whose performance was only average.

PROJECT II.

TITLE: A Study of the Tutorial Plan of Instruction in English History.
PERSON RESPONSIBLE: Henry T. Tyler, Instructor in Psychology.
DEPARTMENT: Sacramento Junior College.
NATURE OF PROJECT: An experimental section was organized in English History on the English tutorial system of instruction. There was no text. Students worked directly from primary and secondary sources. Contacts with the instructor were by individuals or small group conferences. In brief, six hours of directed reading per week with no outside preparation was the method used. There were 21 students in the experimental group.

A controlled group of 31 was taught by the usual lecture and outside preperation method. Both sections were under the direction of the same instructor (M. J. Brickley).

The two groups were approximately equal on the social science section of the Iowa High School Content Examination, being close to the 52nd P.R. for

the college. Both groups were somewhat superior to the college average on the American Council on Education Psychological Examination; the controlled group slightly superior.

The stated objectives of the course in English History for both groups were:

1. Willingness to seek historical truth with freedom from prejudice.
2. Skills in the use of books and other references for getting organized material pertinent to a given problem.
3. Factual knowledge of the period covered by the course.

To check the results of the experiment, the following tests were used:

1. An objective examination covering the content materials of the course.
2. The Iowa Silent Reading Test, Form A.
3. The Rochester Test of Working Skills in the Social Sciences.
4. The Watson Test of Public Opinion for Measuring Fair-Mindedness.

FINDINGS: A slight difference in favor of the experimental groups on each factor measured. Twenty-nine per cent of the controlled group, however, exceeded the median performance of the experimental group.

With such a small number of cases, small obtained differences and actual specific back groups in English History largely an unknown factor for both groups, conclusions should be drawn with caution.

PROJECT III.

TITLE: A Comparative Study of the Distribution of Marks in the Various Departments of the Sacramento Junior College for the School Year 1930-31.

PERSON RESPONSIBLE: James F. Bursch, Director, Department of Research.

DEPARTMENT: Sacramento Junior College.

NATURE OF PROJECT: The distribution of marks for all instructors for the two semesters was assembled and studied as to per cent of A's, B's, C's, D's, F's, and incompletes awarded.

FINDINGS: A marked tendency in general to give the same shape of distribution of marks in the same department both semesters. Distributions fairly similar and approximating the normal distribution curve in all departments with the following exceptions which represent the extremes:

	A's and B's	*D's, F's and Inc.*
	%	%
Music	66	11
Art	62	16
Engineering	34	38
Phys. Sciences	33	34

Ability sectioning where practiced was recognized by the skewing of the distribution.

PROJECT IV.

TITLE: A Survey of the Attainment of the General Objectives in Junior College Social Sciences.

PERSON RESPONSIBLE: Henry T. Tyler, Instructor in Psychology and Social Science Committee of Junior College.

DEPARTMENT: Social Science Department of the Sacramento Junior College.

NATURE OF PROJECT: The Social Science Committee had set as the general objectives for all social sciences:

1. The development of habits and skills in the field.
2. The development of understanding and knowledge in the field.
3. The development of desirable attitudes and ideals.

It was concluded to take a cross-section of social science classes, including History, Philosophy, Economics, Social Institutions, Psychology, Political Science and Geography, and test them as a group at the beginning of the second semester (1930-31) and at the end of the second semester with some battery of tests that might be construed to bear on the objectives of social studies. In conference it was agreed to use the following tests for the following purposes:

To test habits and skills—Haggerty Sigma 3 Reading Test, Rochester Working Skills in Social Science Test (adapted).

To test understanding of knowledge—Iowa High School Content Test, Social Science Section.

To test attitudes and ideals—Watson Test of Public Opinion.

Test data were complete for 184 cases.

FINDINGS: Gains in the second testing over the first were as follows for the several tests:

Haggerty Reading	*Watson Fair-Mindedness*	*Iowa Content Social Science*	*Rochester Social Science Skills*
3.49	4.49	9.31	6.94

In view of the elapsed time between testing, the difference was not ascribed to practice effect.

Studying these differences in the light of their standard deviation and $\frac{\text{S.D. Diff.}}{\text{Difference}}$ it was concluded that for each of the tests the chances were 98 in 100 or more that the difference represented a real gain. It was concluded that there was growth in the attainment of the general objectives in the social sciences during the course of a single semester. Further data of a similar nature on non-social science students are needed to determine whether the development in the attainment of these objectives may be ascribed to instruction in this field.

REPORT OF SAN FRANCISCO PUBLIC SCHOOLS

ROBERT FLOYD GRAY, *Director of Department of Educational Research and Service*

PROJECT I.

TITLE: Mental and Achievement Survey of Pupils Entering Junior High Schools as a Basis for Classification.

DEPARTMENT: High 6th grade of San Francisco elementary schools.

PERSONS RESPONSIBLE: Robert F. Gray and Staff.

NATURE OF STUDY: All pupils leaving the high 6th grades of elementary schools received mental, arithmetic and reading tests. The result of these tests has been utilized in forming homogeneous instructional groups.

FINDINGS:

1. The comparison of chronological and mental ages which follows describes to a certain extent the nature of the abilities to be met among pupils entering the ten junior high schools.

School No.	*Chronological Age*			*Mental Age*		
	Q_1	*Median*	Q_3	Q_1	*Median*	Q_3
	Yrs. Mos.	*Yrs. Mos.*	*Yrs. Mos.*	*Yrs. Mos.*	*Yrs. Mos.*	*Yrs. Mos.*
1	11-10	12-5	13-2	10-7	11-3	12-2
2	11-7	12-2	12-11	10-8	12-1	13-3
3	12-3	13-0	14-6	9-6	10-7	11-5
4	11-8	12-4	13-4	10-7	11-9	12-10
5	11-8	12-3	12-10	10-8	11-11	12-10
6	11-8	12-2	12-11	11-0	12-2	13-0
7	11-7	12-2	13-0	10-11	12-3	13-7
8	11-9	12-3	12-9	9-11	11-2	12-11
9	11-4	11-9	12-3	11-10	12-11	14-8
10	11-3	11-9	12-5	11-5	12-10	14-2
Total	11-7	12-1	12-11	10-9	12-0	13-4

2. The pupils entering the above schools range in mental ability from that required for success in 4th grade of elementary to the senior year of high school.

3. A range of approximately two years' mental ability exists within the middle 50 per cent of the pupils entering the low 7th grade of each junior high school.
4. More than 75 per cent of the pupils in school No. 9 reach or exceed the mental ability of the highest 25 per cent in school No. 3.
5. The highest 25 per cent of pupils entering schools No. 9 and No. 10 have mental ages which would predict success in the low 9th grade.
6. Complete data supplied to each junior high school will aid in the classification of pupils within each school.

PROJECT II.

TITLE: Mental Survey of Pupils Entering Senior High School as a Basis for Classification.

PERSONS RESPONSIBLE: Robert F. Gray and Staff.

DEPARTMENT: High 8th grades of San Francisco elementary schools.

NATURE OF STUDY: All pupils leaving the high 8th grades of elementary schools received the Terman Group Test of Mental Ability in order to facilitate classification in high school. These tests are used to supplement other educational data in assigning pupils to high school work.

FINDINGS:

1. Chronological age and mental ability of pupils leaving the high 8th grades of elementary schools:

	Chronological Age *Yrs. Mos.*	*Mental Age* *Yrs. Mos.*
Q_1	13-6.2	13-2.3
Median	14-0.2	14-2.9
Q_3	14-8.8	15-5.4

2. The median mental age of pupils leaving the high 8th grade of San Francisco elementary schools is 2.7 months higher than the median chronological age.
3. The range of mental ability exceeds that of chronological age in pupils of the high 8th grade by three years.
4. Fifth to 12th grade abilities are shown by pupils entering the senior high school.
5. The above facts call attention to the great need for educational guidance in our senior high schools.
6. The large number of pupils at the lower end of the scale should not only be limited in their election of subjects but placed in classes carefully selected on the basis of their needs and abilities.
7. The spread of ages and abilities shown in this summary demands a high school curriculum not only rich in its offerings but sufficiently flexible for the demands made upon it by such a widely varying group.

PROJECT III.

TITLE: Organization of Homogeneous Instructional Groups at Aptos and Presidio Junior High Schools.

PERSONS RESPONSIBLE: Robert F. Gray and Staff.

DEPARTMENT: In elementary schools having grades contributing to Aptos and Presidio junior high schools.

NATURE OF PROJECT: All pupils entering Aptos and Presidio junior high schools received mental, reading and arithmetic tests before leaving their respective elementary schools. These tests were used as a basis for the organization of homogeneous instructional groups. Aptos, opening for the first time in August, 1931, was organized completely on this basis. The classification which is made first on the basis of chronological and mental age is modified by achievement and teachers' judgment of ability. The findings recorded describe the classification of pupils in the low 7th grade of Presidio, which is indicative of the practice employed throughout Presidio and Aptos. While both of these schools

draw from San Francisco's more privileged neighborhoods, the system of classification is equally applicable to pupils of lower ability.

FINDINGS:

1. The ranges of chronological age, mental age, and intelligence quotients in the low 7th grade of Presidio Junior High School.

Class	*C.A. Range*		*M.A. Range*		*I.Q. Range*
	Yrs. Mos.	*Yrs. Mos.*	*Yrs. Mos.*	*Yrs. Mos.*	
Low 7th—1	10-6	to 12-6	14-0	to 17-10	130 to 160
Low 7th—2	11-0	to 13-5	14-3	to 15-11	110 to 130
Low 7th—3	10-6	to 12-11	13-6	to 14-3	110 to 130
Low 7th—4	10-0	to 12-9	12-3	to 13-5	105 to 123
Low 7th—5	11-8	to 14-11	12-3	to 13-5	95 to 105
Low 7th—6	10-0	to 13-7	10-8	to 12-3	90 to 110
Low 7th—7	10-6	to 15-5	10-6	to 11-5	75 to 90

2. If not grouped homogeneously, these pupils would spread in chronological age from 10 to more than 15 years and in mental ability from 10 years 6 months to almost 18 years, as will be observed in the above tabulation.
3. Under the above grouping it is possible to limit the range to be met in each group to approximately two years chronological age and a year and a half mental age with the exception of the highest and lowest group.

PROJECT IV.

TITLE: Construction of Junior High School Achievement Tests.

PERSONS RESPONSIBLE: Robert F. Gray and Staff.

DEPARTMENT: San Francisco junior high schools.

NATURE OF PROJECT: In order to measure the outcomes of instruction in the San Francisco junior high schools, committees on test construction were formed in the following fields:

(a) English
(b) Mathematics
(c) General Science
(d) Social Science.

Each committee has a teacher representative from each junior high school. The chief aim is to develop tests in each of the four fields that will meet the objectives set by the San Francisco high school courses of study.

It is expected that a tryout edition of the tests will be available for use at the end of the fall term, 1931.

PROJECT V.

TITLE: Development of a Cumulative Record Card for Pupils Promoted from Elementary to Secondary Schools.

PERSONS RESPONSIBLE: Robert F. Gray and Staff.

WHERE CARRIED OUT: In San Francisco elementary schools contributing to junior and senior high schools.

NATURE OF PROJECT: In order to develop a cumulative record card which would better meet the needs of junior and senior high school principals in the classification of entering pupils, a teacher committee was formed. This committee, which co-operated with the research department, was composed of representatives from elementary, junior and senior high schools. Record cards used in twenty-five representative cities were analyzed with the idea of adapting certain desirable features to meet the needs of San Francisco school administration.

FINDINGS: The new cumulative record card has been placed in the schools for use in the current term. It differs from the old pupil record card in the following respects:

1. A more complete set of entries for the items of general information.
2. More convenient arrangement and spacing.
3. Convenient code to indicate causes for failure and transfer.
4. A section for standard test records.
5. A section for comment on traits and special abilities.
6. A section for cumulative judgment on child upon leaving elementary school.

PROJECT VI.

TITLE: Organization of a Tenth Year at Francisco Junior High School.

PERSONS RESPONSIBLE: Robert F. Gray and Staff.

WHERE CARRIED OUT: In Francisco Junior High School and schools to which it contributes.

NATURE OF PROJECT: The purpose of this study was to determine the advisability of establishing a tenth year at Francisco Junior High School. A tenth year in a junior high school should include terminal courses designed for pupils who will in all probability leave school at the end of the tenth year.

FINDINGS: In view of the following findings, a tenth year was established at Francisco Junior High School.

1. A larger proportion of over-ageness exists among pupils who have entered high school from Francisco Junior High School than among other high school pupils.
2. The holding power of the high school for pupils entering from Francisco is less than for other high school pupils.
3. The fact that more Francisco pupils are found in the tenth year of high school than complete the 9th grade at Francisco indicates that all are not making normal progress.
4. While practically all Francisco pupils enter high school, practically 50 per cent drop out before completing the tenth year.
5. The number of Francisco pupils in the high 12th grade is less than one-fourth the number completing Francisco in the fall semester of 1927 and who should be in the high 12th grade had they continued and made normal progress.

PROJECT VII.

TITLE: Examination for Teachers Applying for Position in Secondary Schools.

PERSONS RESPONSIBLE: Robert F. Gray and Staff.

NATURE OF PROJECT: In April, 1931, the San Francisco Board of Education adopted a plan of teacher selection for the secondary schools which included a written examination. The plan was to replace a method of selection based on credential rating, successful experience, and a personal interview. The addition of the written examination will make the basis of selection of secondary teachers resemble that used for the elementary teachers and which has been practiced successfully for several years.

The written examination as approved covered the following fields:

(a) English Usage
(b) The World Today
(c) School and Classroom Procedure.

Each examination carried a value of 100 points on the total competitive examination, bearing the following relation to the total:

1. Written Examination	3000 points
2. Amount of Training and Experience	2000 points
3. Quality of Training and Experience	3000 points
4. Personal Interviews	200 points
Total	1000 points

While each applicant who was not already employed by the San Francisco Public Schools was required to take this examination, the record made was compared only with applicants in his own field, *i. e.*, English teachers competed only with English teachers, industrial arts teachers with industrial arts teachers, etc. The combined rating on Sections 1, 2 and 3 above determined the candidates' eligibility to the oral examination. Two times the number estimated to be needed for each subject were chosen from those standing highest in each subject list.

OUTCOMES:

1. Members of the research staff constructed two to three times the number of objective test questions desired in each of the three fields.

2. The first test administered to 656 applicants in May, 1931, consisted of 100 questions in each of the three fields selected by deputy superintendents and approved by the superintendent.
3. In order to give these examinations equal weight in the total examination, they were distributed on a curve in which the highest score in each examination received a final grade of 100, the median a grade of 75, and the lowest a grade of 50.
4. The ratings made on the three examinations were combined with the training and experience rating in order to determine those elegible to the oral examination.

PROJECT VIII.

TITLE: Holding Power of the Secondary Schools.
PERSONS RESPONSIBLE: Robert F. Gray and Staff.
NATURE OF STUDY: To determine changes in the holding power of grades 7 to 12, inclusive, for the years 1927, 1929 and 1930.
FINDINGS:

1. Enrollment of each grade expressed on a per cent of the first grade enrollment.

Grade	*1915*	*1927*	*1929*	*1930*
7	44.3	85.3	81.9	78.2
8	35.5	80.4	81.8	78.7
9	22.2	78.6	84.2	87.5
10	13.2	49.6	67.5	69.7
11	6.5	31.9	42.9	47.4
12	2.5	22.4	32.6	36.4

2. In the ten-year period from 1919-20 to 1929-30 the total average daily attendance has increased 38.6 per cent.
3. The high school attendance has increased 239 per cent, the evening high school attendance 197 per cent, the kindergarten attendance 214 per cent, and the elementary school attendance 9 per cent.

REPORT OF SANTA MONICA SECONDARY SCHOOLS

J. HAROLD WILLIAMS, *Director, Department of Research*

PROJECT I.

TITLE: Promotion and Non-Promotion.
PERSONS RESPONSIBLE: Research Staff.
SCHOOLS INVOLVED: Junior and senior high schools.
NATURE OF THE PROJECT: School progress is one of the chief concerns of the department of research and therefore systematic surveys of promotion and failure are given an important place in the yearly program. The main purpose of such studies is to measure the distribution of promotions by grades, schools, and subjects, in order that significant changes and improvements may be noted.

This study dealt with the causes and extent of failure in the high schools as regularly reported by the teachers. The report contained (a) distribution of failures according to reason given, (b) distribution of failure according to I.Q. and subject in which failure occurred, (c) distribution of failure according to grade and department.

PROJECT II.

TITLE: High School Marks.
PERSONS RESPONSIBLE: Research Staff.
WHERE CARRIED OUT: Junior and senior high schools—all grades.
NATURE OF PROJECT: A distribution of teachers' marks was made at the close of each semester. The purpose was to present the facts regarding the use of the marking system in the hope that such facts might be of use in improving standards and procedures.

PROJECT III.

TITLE: Preliminary Classification Survey.
PERSONS RESPONSIBLE: Research Staff.
WHERE CARRIED OUT: Elementary, junior and senior high schools.
NATURE OF PROJECT: This study was made in October, 1930, and included (a) a study of age-grade distribution, yielding facts concerning retardation and acceleration, (b) race distribution.
FINDINGS: In junior high schools 47.2 per cent are at age; 27.8 per cent are retarded; while 25 per cent are accelerated.

Racial distribution for all schools was as follows: 88.8 per cent, American white; 6.7 per cent, Mexican; 2.2 per cent, colored; 1.9 per cent, Japanese; 0.4 per cent, Chinese and others.

PROJECT IV.

TITLE: Use of Radio in Santa Monica City Schools.
PERSONS RESPONSIBLE: Research Staff working with Miss Alice Rogers, Supervisor of Music Education.
SCHOOLS INVOLVED: All schools.
NATURE OF PROJECT: Radio education presents many problems that should be worked out carefully and gradually, but experimental first-hand knowledge is necessary for the better understanding of any problem. At the beginning of the school year, 1930-1931, the installation of a radio in each school was authorized. The first term's work was mainly a period of experimental listening-in with all schools listening-in to some extent. After a period of two months, the first check was made by obtaining reactions from teachers and pupils. The reports give a summary of the replies of school principals to a radio questionnaire.

PROJECT V.

TITLE: New Stanford Achievement Survey.
PERSONS RESPONSIBLE: Research Staff.
WHERE CARRIED OUT: Grades 3-A, 5-A, 7-B.
NATURE OF PROJECT: This survey was given at the close of the first semester. The findings of the survey were favorable, as indicated by the fact that the medians of most grades exceed the norms.
TITLE: Seashore Musical Talent Test.
PERSONS RESPONSIBLE: Research Staff; Music Staff.
SCHOOLS INVOLVED: All junior high schools.
NATURE OF PROJECT: The purpose of this survey was to classify, for the Music Department, all junior high school pupils taking, studying or playing instruments. A total of 265 pupils were tested. All grades from 7-B to 9-A, inclusive, were represented. The age range was from 10 to 18 years. The I.Q. range was from 60 to 150. All scores were converted to percentile rank.

PROJECT VII.

TITLE: Mechanical Aptitude Survey.
PERSONS RESPONSIBLE: Research Staff.
SCHOOLS INVOLVED: Junior high school; grades 7-B, 8-A.
NATURE OF PROJECT: The tests used were Stenquist Mechanical Aptitude Test I, which is regularly in use for annual survey purposes; Detroit Mechanical Aptitude Test for Boys; Detroit Mechanical Aptitude Test for Girls. The two latter tests were used this year for the first time in the Santa Monica schools.

PROJECT VIII.

TITLE: A summary of the Curriculum Work in the Santa Monica, California, City Schools for the Four School Years, September 1927, to June 1931.
PERSON RESPONSIBLE: M. J. Stormzand.
WHERE CARRIED OUT: All schools.
NATURE OF PROJECT: The summary indicates the principal curriculum problems taken up during each of the four school years.

GRADUATE DEGREES, WITH MAJOR FIELD IN EDUCATION, GIVEN DURING THE ACADEMIC YEAR 1930-1931

Assembled for the Committee on Educational Research Activities by
FRANK C. TOUTON, *Chairman*

This list is published in THE QUARTERLY *for the purpose of revealing to the profession the general nature of the problems in education studied and reported on by graduate students in the colleges and universities of California.*

AT THE UNIVERSITY OF CALIFORNIA

The Degree of Doctor of Philosophy

WALTER SAX BLOOM
Thesis: State provisions for adult education in the United States in the light of their history.

FRED W. TRANER
Thesis: The American concept of secondary education as revealed by an analysis of the laws of the several states.

The Degree of Doctor of Education

HAROLD BRENHOLTZ
Thesis: Population as a potential factor in the need for teachers for secondary schools of a state, with special application to California and Texas.

JOEL ANDREW BURKMAN
Thesis: Teachers' permanent certificates and professional growth.

ASAEL BEANLAND MURPHY
Thesis: Basic training program for city school superintendents.

MATTHEW DINSDALE SMITH
Thesis: Factors contributing to the development of the curriculum of public secondary education in Mexico from 1867 to 1927.

VAUD ANCIL TRAVIS
Thesis: Supplementary books in the elementary schools.

GUY ASHLEY WEST
Thesis: The administration of Subject A at the University of California.

LOUISE WILBER
Thesis: The vocations of the visually handicapped: a study of the need of vocational guidance in residential schools for the blind.

The Degree of Master of Arts

HILDA MARGARET BAILY
Thesis: The reorganization of the school system in accordance with individual and social principles.

C. LOUISE BOEHRINGER
Thesis: The education and experience essential to the editorship of a state educational journal.

ROSA BAYLESS CAGE
Thesis: School library service for California cities.

ARTHUR ELLIS CLAGETT
Thesis: A school system winning the confidence and support of the community.

HARVEY FISK CLARKE
Thesis: A study of the annexation of elementary districts to high school districts in California, with special reference to the general annexation law of 1921.

ROBERT LOCKE COOKE
Thesis: Some contributions of the Lick and Wilmerding schools of San Francisco to the administration of vocational and secondary education.

ELEANOR MERRITT DOHERTY
Thesis: A study of the citizenship-point plan as operative in the high schools of California.

WILLIAM FITCH ELDER
Thesis: The function of the senior high school home room in the guidance program of the Oakland public schools.

EDWARD WILLARD EVERETT
Thesis: A study of occupations followed by former students in certain representative high schools of the San Joaquin Valley.

MARY DONALDINE GRASS
Thesis: The organization of curricula for the training of women teachers in physical education.

MARGUERITE HORNBECK GRAY
Thesis: An experiment in the use of visual aids in general science teaching.

JAMES WILBUR HAYNES
Thesis: The administration of county purchasing of school supplies under the law of 1927.

EVIE GILBERT HOOVER
Thesis: The orientation of L7 grade entrants in large junior high schools of the East Bay district.

HELEN KATHLEEN JACOBS
Thesis: A bibliography of biography useful in counseling and guidance.

HILDRETH LENORE KOTSCH
Thesis: The status of the physical and medical examination of girls in California high schools.

THEODORA THURBER MAHONEY
Thesis: Dramatic art in the junior high schools in California.

DELMER BRADFORD MARSHALL
Thesis: Unionization of elementary school districts of California compared with certain educational and financial factors.

LAURA MARIE MEREDITH
Thesis: A study of the reliability of the new Stanford Achievement Test.

DONALD NEWMEYER
Thesis: Construction of a standard test in plane geometry.

HENRY OBERHANSLEY
Thesis: The status of the agriculture curriculum in the secondary schools of Utah.

STEPHEN EDWARD SHERRY
Thesis: A critical evaluation of some methods of constructing courses of study.

JOHN GERRARD SMALE, JR.
Thesis: A school unionization program for Madera County, California.

HAROLD WATSON SMITH
Thesis: Child accounting in Arizona public elementary schools.

EINAR RALPH SORENSEN
Thesis: The administration of an educational program for the physically handicapped children in smaller cities, with special reference to the City of Alameda.

ERNEST CLARK STEELE
Thesis: Education in civics textbooks.

A. Marion Stockton
Thesis: The problem of vocational guidance in the Richmond Union High School.

Nell McCrumb Strowig
Thesis: A course in clothing and home problems for the junior high school.

David Whittom Sturges
Thesis: The status of sex education in certain schools and colleges in California.

Mary Martha Thomsen
Thesis: A personality study of students in certain public junior colleges in California.

Margaret Elsie Toles
Thesis: Problems of student-teaching in rural and urban schools.

Lloyd K. Wood
Thesis: A study of the cost and estimated value of teachers' institutes in California.

Riley Davis Woodward
Thesis: The construction and application of English grammar units for high school students.

Candidates completing under the plan which does not require Master's Thesis

Harold Philips Blome
Seminar Study: The organization, support and control of the schools of Arizona.

George Fanning Creary
Seminar Study: Library service in the elementary schools of Contra Costa County.

Agnes Clark Culbertson
Seminar Study: A practical survey of elementary science for the supervisor and teacher.

Helen Stone Dozier
Seminar Study: A suggested program of guidance for high school students anticipating the teaching of physical education.

Helen Fredericka Hansen
Seminar Study: A study of resignations and dismissals in schools of nursing of California.

Carolyn Jennings
Seminar Study: A study of the use of time outside of school by 129 7th grade pupils of the University High School, Oakland, California, during the week of May 19-25, 1929.

Margaret Larsen
Seminar Study: A comparative study of employed and unemployed children in the University High School.

Carl Alfred Larson
Seminar Study: Science textbook adoptions by California four-year and senior high schools.

Tikhon I. Lavrischeff
Seminar Study: Teacher-training for Alaska.

Gertrude Eleanor McMorran
Seminar Study: A study of the use of time outside of school by 114 11th grade students of the University High School, Oakland, California, during the week of May 19 to 25, 1929.

Wert Emmit Moore
Seminar Study: Office training; typing section, senior high school.

Asael Beanland Murphy
Seminar Study: The administration of school supplies in Contra Costa County.

Phyllis Packer Svane
Seminar Study: The evaluation and selection of textbooks.

WAI HON TAM
Seminar Study: The reconstruction of Chinese high school curricula.
HELEN GERTRUDE THURSBY
Seminar Study: An experiment designed to test the content of a course in corrective physical education determined according to functional technique.
NATHAN GRANT TOLMAN
Seminar Study: Classification of boys for purposes of physical education.
FREDERICK EDWARD WHITWORTH
Seminar Study: A comparative study of the effects of instructions on guessing on the reliability of certain of the multiple response tests.

AT THE CLAREMONT COLLEGES

The Degree of Master of Arts

WILLIAM CARL ANDREWS
Thesis: Factors determining vocational choices of secondary school students.
MARGUERITE OLGA ELLIOTT
Thesis: Vocational guidance in the art curriculum.
ERNEST WILLIAM FISCHER
Thesis: A study of the departmental teaching costs in Chaffey Junior College for the fiscal year ending June 30, 1930.
MELBOURNE A. GAUER
Thesis: Certain phases of the problem of larger units of administration, with a particular study of Orange County, California.
BERDENA M. HALL
Thesis: Sex difference in intelligence and achievement.
EDITH MARION LEONARD
Thesis: The selection of prospective teachers.
CLARA NEELY PAYNE
Thesis: Study in the needs and problems of girls in the public secondary schools.
OLAF EUGENE SNYDER
Thesis: A study of some of the factors conditioning failure in high school.
WILDA CRISPELLE SUNDERLAND
Thesis: Comparative study of the intelligence of a unit of enlisted men of the United States Navy and high school students.
KATHERINE BRADLEY TYRRELL
Thesis: Influence of John Dewey upon the progressive education movement.
MARGARITA WRIGHT
Thesis: Experimental course of study in the social sciences on the basis of activities adapted to an elementary school in Mexico subject to state requirements.

AT OCCIDENTAL COLLEGE

The Degree of Master of Arts

OLIVE COCKE
Thesis: An experiment to determine the value of work books in 6th grade arithmetic.

AT THE UNIVERSITY OF SOUTHERN CALIFORNIA

The Degree of Doctor of Philosophy

BETTY TRIER BERRY
Dissertation: A study of reading comprehension at the college freshman level.
MYBERT EUSTACE BROOM
Dissertation: An analysis of certain factors affecting reading achievement at the college level.
JOHN WESLEY HARBESON
Dissertation: A critical study of the practice of classifying junior college students into separate certificate and diploma groupings.

ELLIS ONEAL KNOX
Dissertation: The trend of progress in the light of new educational concepts in a group of American colleges dominated by religious influences.
CARLOTTA COMER WAGNER
Dissertation: An experimental study in pianoforte learning with reference to the theory of formal discipline and transfer of training.

The Degree of Doctor of Education

GEORGE HENRY BELL
Dissertation: An experimental study of character from the standpoint of conflict and self-control.
VERNE RALPH ROSS
Dissertation: The relations between intelligence scholastic achievement and musical talent of three racial groups.

The Degree of Master of Arts in Education

ALICE ADAMS
Thesis: Weaknesses in the training of beginning primary teachers as revealed by ratings of principals and interviews with teachers.
IRIS HELENA ALBERT
Thesis: An experiment with individual assignments in developing sewing ability.
SAMUEL CHARLES AMBLER
Thesis: The relationship between broken homes and school progress as indicated by school records.
EDWIN BALDWIN ANGIER
Thesis: The construction of a landscape gardening course for home owners.
MARION RUTH ARZT
Thesis: An analysis of the literature relating to the teaching of chemistry in secondary schools.
MARION LONG BAKER
Thesis: Testing programs in the mathematics departments of the high schools of Los Angeles, California.
JESSIE BALDWIN BARNES
Thesis: The place and function of the auditorium as the integrating and socializing center in an elementary platoon school.
VERA PAULINE BENORE
Thesis: An evaluation of the content of clothing courses in terms of pupils' needs.
JAMES BROOKS BLAISDELL
Thesis: The development of education in Mexico.
OLIVE COFFMAN BOOTH
Thesis: The semestral achievements of typewriting pupils in California four-year and senior high schools.
GENEVIEVE ROSE BURR
Thesis: Teacher turnover in the one- to seven-room schools of California before and since the tenure law of 1927.
HOMER GREEN CAIN
Thesis: Some procedures in teaching first-year algebra.
HARRY WILLIAM CAMPBELL
Thesis: The organization and content of required courses in physical education for men in junior colleges.
AUDREY LOUISE CARTER
Thesis: Methods of selection and evaluation of textbooks in English composition used in high schools.
LUCILE MAE CARTER
Thesis: An experimental study comparing the regular course and procedure for retarded pupils in the 10th grade English with a course and method adapted to these pupils.
CLARENCE WHITE CHAMBERLAIN
Thesis: A survey of the San Jacinto elementary school.

ESTELLA LOUISA CHURCHILL
Thesis: An investigation to determine the feasibility of placing girls as mothers' helpers.

LLEWELLYN H. COBURN
Thesis: The content of a junior high school course in occupational geography.

KATHERINE KENNEDY COLLINS
Thesis: A critical study of the occupational exploratory courses in junior high schools in Los Angeles.

RAY MICHAEL CUNNINGHAM
Thesis: The relationship of pupil saturation to type of residence district.

JENNIE G. DAVIS
Thesis: A critical study of the materials and methods of B7 reading.

FRANCES CASEY DELMET
Thesis: A study of the educational achievement of correctional school boys under the contract plan.

LORENZO CARL DENSLOW
Thesis: The Denslow Maze Test.

PAUL FRANCIS DEVINE
Thesis: Organization of a course in chemistry for firemen.

CLIFFORD ORVILLE DICE
Thesis: The legal status of public school teachers in California.

ESTHER AINA DORFFI
Thesis: An analysis of the professional literature relating to the teaching of French.

GENEVIEVE ROSEMARY DOWNS
Thesis: Dramatic instruction in correctional schools for boys.

ALICE JANE DULOHERY
Thesis: Analysis of counseling work in senior high school.

HENRY OTTO DYCK
Thesis: Organization of the Los Angeles continuation high school under the fifteen hour law.

JOHN PAUL DYCK
Thesis: A study of normal junior high school problem boys.

MARGARET McDONALD DYER
Thesis: Study procedures in the field of history.

RUSSELL D. DYSART
Thesis: A comparison of the results of different time limits in objective tests.

ELIZA ESTROP
Thesis: The attitude of high school girls toward Home Economics courses.

DELLA GOODE FANCLER
Thesis: An analysis of professional literature relating to the teaching of social studies in secondary schools.

MARION FEATHERSTONE
Thesis: Supervision of art teaching in the elementary and junior high schools: teacher difficulties and supervisory practices.

LUTIE A. FEENEY
Thesis: Methods of economizing time in visual education.

ALBERTA F. FLORY
Thesis: Recent methods of teaching parental education.

MAXINE GORDON FRANK
Thesis: The organization, administration and activities of the dramatic clubs in the senior high schools of Los Angeles and vicinity.

MARY ELIZABETH FRICK
Thesis: Histories of the Metropolitan High School and the Huntington Park Opportunity School.

DOMER F. GATCHEL
Thesis: An experiment with the how-to-study course in high school.

FRANK J. GEORGES
Thesis: Financial policies and practices of teachers.

BENJAMIN H. GIBBON
Thesis: A study of the use of teacher-made tests in the improvement of pupil achievement.

ELEONORE GINNO
Thesis: Physical education for girls in the private secondary schools of Los Angeles.

ADELAIDE L. GLADDEN
Thesis: The status of remedial reading in junior and senior high schools of the United States.

ORA FRANCIS GLASS
Thesis: History of industrial arts education in California.

ROBERT LEWIS GOOD
Thesis: The relation between reading ability and junior high school success.

KATE LOUISE GRIDLEY
Thesis: The effects of carrying an extra solid on a group of high school girls.

FAYE BENSON HALL
Thesis: The educational progress of the graduates of the large, small, and foreign elementary districts which comprise the Chaffey Union High School District.

JOHN WILLIAM HAMAN
Thesis: Curriculum organization of the social studies in secondary schools.

PEARL IRENE HAMLIN
Thesis: Methods of giving curricular guidance in the senior high schools of southern California.

EDITH JOSEPHINE HANSON
Thesis: A study of intelligence tests results for Mexican children based on English and Mexican test forms.

FREDERICK WILLARD HANSON
Thesis: The technique of teaching plane geometry.

EDITH MIRIAM HARKER
Thesis: The effect of the continuous operation of one mental function upon the efficiency of certain other mental functions.

ARCHIBALD PARKER HARRISON
Thesis: A topical analysis of ten junior high school textbooks in American history.

DOROTHY SIBYL HASEROT
Thesis: The status of journalism in the junior high schools of California.

FRANK HAGEN HAWK
Thesis: A comparative study of the Dalton laboratory and traditional methods.

EARLE FOOTE HAZELTON
Thesis: A statistical comparison of the abilities and accomplishments of the R. O. T. C. boys and the Non-R. O. T. C. boys in the Los Angeles city schools.

GEORGE DANIEL HENCK
Thesis: Present status of the training of industrial arts teachers in the United States.

ARMIN CARL HENTSCHKE
Thesis: An investigation into the use of student help in Los Angeles high schools.

ROBERT STERLING HICKS
Thesis: An evaluation of the methods of apportioning state school funds in Wyoming, with proposed modifications.

GRACE W. HOGOBOOM
Thesis: An experimental study of the value of remedial reading for slow-learning pupils.

FRANCES MARIE HOLLISTER
Thesis: The part practical arts play in the education of handicapped children.

RUTH PLIMPTON HOLMDAHL
Thesis: The teaching of office practice in public secondary schools of the United States.

ARNOLD OLIVER HORNING
Thesis: The construction of achievement tests for 9th and 10th grade woodwork.

CLARA BLANCHE HUGHES
Thesis: An analysis of the inter-relation of parts of the School of Education aptitude test. (Given prior to January, 1931.)

MAUDE MCPHERSON HUME
Thesis: A comparative study of the education of women prior to the Christian era.

WILLIAM R. HURLEY
Thesis: An investigation of the effect of certain activities on scholarship in junior high school.

ALPHA A. JAMES
Thesis: An experimental investigation of children's interests as revealed by responses to pictures.

IDA CLEO JAMES
Thesis: Instructional procedure in hospital schools.

ELIZABETH JUTTA JENSEN
Thesis: The organization and administration of physical education for women in the public junior colleges of California.

MARGUERITE E. DOWNEY JOHNSON
Thesis: An experimental study of the mathematical abilities of superior children, with suggestions for an enriched curriculum in plane geometry.

LILIAN SARA JONES
Thesis: **A study of the activity program in elementary schools.**

SCHUYLER C. JOYNER
Thesis: Prognostication of student's success in school and in teaching.

ESTHER VICTORIA KAHLE
Thesis: Legislative sources for agricultural and home economics education through the land grant college system.

VIOLET GOULD KAMMERER
Thesis: The development of public education in Mexico since 1920.

LILLIAN ILONA KARDOS
Thesis: Education in Hungary before and after the World War.

ANNIE ARMINE KARTOZIAN
Thesis: Methods of teaching history through biography.

WILLIAM SIMS KIENHOLZ
Thesis: A partial study of apprenticeship in the United States.

ELSIE RUTH LARSON
Thesis: An evaluation of current practices in the teaching of English composition in high school.

J. CALVIN LAUDERBACH
Thesis: A survey of the public elementary school in Chula Vista, California.

GRACE LEADINGHAM
Thesis: The interests of the low I.Q. adolescent.

BURLING VINCENT LEE
Thesis: The adult education movement in the public schools of California.

HAZEL GRACE LEITZELL
Thesis: Education students' ideas on certain questions of instructional technique.

ABRAHAM BENJAMIN LIFF
Thesis: Factors which lead 9th grade junior high schools pupils to make their occupational choices.

JOHN RAYMOND LIVENGOOD
Thesis: A study of pupil interest in science in Los Angeles city schools.

EVERETT ISAAC LOCKHART
Thesis: Methods of teaching by contracts.

ETHEL GAGE LUDWICK
Thesis: Self realization—the concept in modern educational theory—a symposium.

HELEN LYNCH
Thesis: The possibility of justifying the teaching of typewriting in the 7th grade.

HARLEY WESLEY LYON
Thesis: The relationship between standardized test results in elementary school and success in junior high school as determined by teachers' marks.

IDA B. MCADOW
Thesis: An experiment in teaching English grammar incidental to composition.

VICTORIA MAY MCALMON
Thesis: The development of occupational courses in the Los Angeles Junior College.

BETH ADA MCCALL
Thesis: The contribution to skill in arithmetic made by a study of the use of a calculating machine.

STANLEY CHARLES MCCLINTIC
Thesis: The administration of special day and evening classes for adults in the public schools of California.

MARGERY MCDONALD
Thesis: The development of Friends colleges in the United States, their present status and trends.

HAZEL ALETHA MCDOWELL
Thesis: Methods of teaching biology.

VERA LUCILE MCMURRY
Thesis: An investigation of a group of children of superior mental ability in a six-year high school of Los Angeles.

JUNIA NAVE MACMILLAN
Thesis: An analysis of the literature relating to the teaching of English grammar.

FLORENCE IGERNA MAHER
Thesis: Practices in the teaching of business English in secondary schools of the United States.

JANET ELIZABETH MARKS
Thesis: Methods of teaching stagecraft.

FRANK GEORGE MAKEPEACE
Thesis: The instructional costs of vocational subjects in the senior high schools of Los Angeles.

FRANCIS OLEARY MARTIN
Thesis: The relationship between reading ability and success in junior high school mechanical drawing and agriculture.

KATHERINE E. MARTIN
Thesis: A comparative study of American history as taught in junior and senior high schools.

FRANCES MINER
Thesis: How to teach safety in the high school.

FRANK HILL MIXSELL
Thesis: Measurable results of the use of visual aids in teaching A7 history.

LUELLA ZERELDA MOORE
Thesis: The history of curricularized health education in the Los Angeles city elementary schools.

ANTOINETTE MORRISON
Thesis: Technique for teaching the novel.

FLORENCE DUVALL MOUNT
Thesis: An evaluation of pupil participation in school government in elementary schools of the United States.

VERL MURRAY
Thesis: A comparative study of the boys of Whittier State School and Monrovia-Arcadia-Duarte High School as to play information and athletic achievement.

LESLIE JAMES NASON
Thesis: The effect of diagnostic and remedial reviews on improvement in third semester algebra.

MITYLENE LOSSING NEWTON
Thesis: Methods of utilizing commercial advertising materials in the teaching of home economics.

CATHERINE KATE NICHOLAS
Thesis: A brief study of the development of some of the educational enterprises existent today in India, including Burma.

EFFIE MAY OLSEN
Thesis: A study of group activity versus individual effort in 6th grade English and arithmetic.

FLORENCE MANLEY OSBORNE
Thesis: A study of the training and classroom methods of teachers of French in the secondary schools and junior colleges of California.

WILLIAM R. B. OSTERHOLT
Thesis: Physical education and athletics in southern California churches.

FRANK PAUL OVERFIELD
Thesis: An experiment with a modified form of the socialized recitation in teaching plane geometry.

PAULINE E. PARKER
Thesis: A study of algebra prognosis.

HENRY LEE PECHOTA
Thesis: A study of the administration and organization of the welfare functions of nine southern California school systems.

ELMER J. PEERY
Thesis: A study of the construction, equipment and utilization of boys' gymnasium locker and shower rooms in southern California high schools.

MARGUERITE PEERY
Thesis: A critical study of classroom practices and methods in teaching American literature.

ALICE ELLEN PERSONS
Thesis: A philosophy of vocational education.

CHARLOTTE MONTAGUE PETERSON
Thesis: An analysis of objective studies relating to the teaching of literature in secondary schools.

WINNIE ALDEN PHELPS
Thesis: Scope, aims and curricular organization of adult education in the public schools of the United States.

WILLIAM S. POTTS
Thesis: A study of the administrative machinery for selecting and dismissing teachers.

ELEANOR PROBERT
Thesis: Journalism in the secondary schools of California.

RALPH HUNTINGTON PRYOR
Thesis: The relation of unit versus multiple control of executive functions.

RENA A. PURDY
Thesis: Methods of using visual aids to teach primary language.

PEARLE RANKIN
Thesis: The status of geography in secondary schools.

ESTHER ELISABETH REESE
Thesis: How to study algebra.

RALPH OLIVER REINER
Thesis: The organization and administration of modern public education in Korea.

RUTH MARIE REPATH
Thesis: An analysis of the problem solving difficulties of 8th grade students in general mathematics.

EUGENE SCOTT RICHARDS
Thesis: A study of material dealing with race educational problems.

J. STANLEY ROBSON
Thesis: A study of health interests and behavior of high school students.

VERA MAYME ROGERS
Thesis: Extensive reading procedures in the teaching of literature.

ROBERT TROWBRIDGE ROSS
Thesis: Problems of college freshmen.

CARMOLITA ROUS
Thesis: Procedures in teaching girls' athletics in high school.

ELMER ALVIN ROW
Thesis: How to make training transfer.

EDITH F. RUSK
Thesis: An experimental study of three methods in teaching 9th grade algebra.

EDWIN CHANDLER SANDERS
Thesis: Study of immediate recall of pleasant and unpleasant experiences as measured by responses to pictures.

VIRGINIA SCHNEIDER
Thesis: A comparative study of the abilities of white and Mexican children as shown by the rational learning test.

HUBERT HADLEY SEMANS
Thesis: Social life in the dormitory and on the playground of children's institutions.

ESTELLA BARNUM SHELLEY
Thesis: The status of English in the evening schools.

FLORENCE KELLER SHIRLEY
Thesis: An analysis of the professional literature relating to the teaching of typewriting in public secondary schools.

MIRIAM EGAN SIMONS
Thesis: An analysis of the professional literature relating to the teaching of typewriting in public secondary schools.

CHARLES GRANDISON SMITH
Thesis: An experimental study to determine the relative merits of the project and traditional methods of teaching high school biology.

GLADYS UHLS R. SOWERS
Thesis: A study of the development of health education in elementary schools.

VIOLET GOOCH STONE
Thesis: A study of the organization and administration of a class for gifted children.

MYRTLE VIOLA STUELKE
Thesis: A comparison of an oral and a written practice method in English.

PHILIP H. TAYLOR
Thesis: Comparison of certain aspects of public junior colleges and four-year liberal arts institutions in southern California.

WESLEY B. THURMAN
Thesis: Unit costs of supplies in the four-year high schools of Los Angeles County.

GEORGE EMMONS TICHENOR
Thesis: A study of the relationship between arithmetic ability and mechanical aptitude.
CHARLES WILDERMAN TRIGG
Thesis: An analysis of individual responses to Terman Group Test Form A.
CLINTON C. TRILLINGHAM
Thesis: Administrative devices for stimulating scholarship in the junior high schools of Los Angeles County.
WINNIFRED THRAVES TURNER
Thesis: An analysis of the population of the public evening high schools in Los Angeles.
MARY ALICE VAN BARNEVELD
Thesis: Administration of registration, records and allied student problems in the larger senior high schools of Los Angeles.
CORA B. VAUGHN
Thesis: The administrative organization of student teaching.
JOSEPH EVERETT WARNE
Thesis: The organization and administration of adult education in public schools of California.
BATA BEMIS WEERSING
Thesis: Oranization of thought as an aim in English composition.
CLARENCE WEINSTOCK
Thesis: The status of instruction in electricity in the secondary schools of California.
BENJAMIN WEISS
Thesis: An analysis of continuation students in Los Angeles.
PAUL T. WELLES
Thesis: A standard lay-out for a science room for 4th, 5th and 6th grades in a platoon school.
EVA WENTWORTH
Thesis: Three advanced educational reformers.
HAZEL GOTTSCHALK WHITAKER
Thesis: A study of gifted negro children in the Los Angeles city schools.
GRACE A. WHITTIER
Thesis: References to aviation in general science courses.
MORRIS H. WILKINSON
Thesis: Administrative control of discipline in junior high schools.
CLARA MILDRED WILLITS
Thesis: An experiment to compare methods of instruction for gifted children in unselected groups in modern European history.
ARTHUR K. WILSON
Thesis: A study to determine the relative cost per pupil of class-room periods of different time allotments.
EUGENE WOLFE
Thesis: The organization and administration of summer high schools.
FLOYD GILBERT WOOD
Thesis: Duties of California school superintendents and principals of union high schools having fifteen to one hundred teachers.
GLENN MENG WOOLLEY
Thesis: The reorganization of subject-matter in high school physics and chemistry.

AT LELAND STANFORD JUNIOR UNIVERSITY

The Degree of Doctor of Philosophy

LESLIE ALBERT GLINZ
Dissertation: The development of public secondary education in Manitoba.
JOHN RALPH NICHOLS
Dissertation: State educational policy in California during 1910-1915.
SPENCER LONGSHORE STOKER
Dissertation: A study of international education.

FENG-GANG WANG
Dissertation: Japanese influence on educational reform in China, from 1895 to 1911.

The Degree of Doctor of Education

RICHARD BENSON
Thesis: A Comparison of the growth and development trends as between public and private secondary schools in certain western states during the period from 1890 to 1920.

ROSCOE DAVID CASE
Thesis: The platoon school in America.

DUNCAN ELLSWORTH CLARK
Thesis: Nationalism in Education, revealed in congressional action, to 1862.

LU-DZAI DJUNG
Thesis: Democratic tendencies in the development of modern education in China.

JOHN MONROE HACKLER
Thesis: The relative value of courses in student teaching and courses in observation.

THETA HARRISON
Thesis: The history of the movement for a national university in the United States.

JAMES ORR MCLAUGHLIN
Thesis: A case study of teachers judged successful and non-successful.

FRED LYMAN TIBBITTS
Thesis: A study of the effectiveness of two types of co-ordination service in part-time education.

The Degree of Master of Arts

FANNIE ORLINA AMES
Thesis: The teacher in American literature.

FRANK A. BAUMAN
Thesis: Business management in a California high school.

ALBERT NILES BENSON
Thesis: Organization and administration of the elementary school libraries in Oakland.

HARRY RAY BENSON
Thesis: Problems in the selection of school building materials.

HENRY FRANCIS BISHOP
Thesis: Compulsory education in California, with recommendations for work permits.

DWIGHT MONTGOMERY BISSELL
Thesis: A study of financing adult education.

LUCILLE MARIE BOLTON
Thesis: Home economics as an avocation.

LILAH CLARK BRADFORD
Thesis: A study of the changes in speed and accuracy made by students in typewriting classes in the public schools of Fresno, September, 1929.

JOHN PRENTISS BROWN
Thesis: The construction and use of textbook rating scales.

KENNETH ALTON BROWNE
Thesis: Desirable qualifications of a high-school publications adviser and teacher of journalistic writing.

HARRY MORGAN CHALLENDER
Thesis: The administration of public education in Wyoming.

ERNEST MARTIN CHRISTIANSEN
Thesis: Essential laboratory equipment for physics in the junior college.

ANNE VON CHRISTIERSON
Thesis: Motivation through praise and criticism in the teaching of social science in the junior high school.

BYRON HAWKINS CONKLE
Thesis: A history of fatigue studies in their relation to education.

JAY DAVIS CONNER
Thesis: A co-operative study of teaching difficulties and supervisory activities.

WAYNE WILLIAM CROW
Thesis: Compulsory education laws of California.

MARIE ELYCE CURTIS
Thesis: Can teaching success be predicted?

WILBUR ELSWORTH DANIEL
Thesis: A study of unit costs in schools of western Washington.

RAYMOND HENRY FISHER
Thesis: A study of the scholarship of self-supporting and working students of Stanford University.

BURTON EDMUND FORNEY
Thesis: Training of the school office personnel.

CLEMENT SILAS FOX
Thesis: A study of sex differences in achievement of junior college freshmen.

JOHN ROBERT GEORGE, JR.
Thesis: A study of the grade distribution of a California high school.

ROBERT EARL GIBSON
Thesis: An elementary school survey of Contra Costa County, California, with recommendations for a reorganization.

ELEANOR VICTORIA GRATZ
Thesis: A course in primary arithmetic for teachers based on the psychology of the learning situation.

CECILE BELKNAP HALL
Thesis: Studies in observation of teaching.

HENRY SYLVESTER HAMPTON
Thesis: Proprietary versus board schools.

JOHN FLINT HANNER
Thesis: A study of the facts involved in establishing a state university at Fresno, California.

LEO ALVIL HARRIS
Thesis: Comparison of fraternity and non-fraternity graduates of a California high school.

WAYNE LEE HAWKINS
Thesis: The relation of extra-curricular activities to leisure time education.

AILEEN MARIE HEALY
Thesis: A test of achievement in junior high school mathematics.

SYLVESTER LYMAN HILBY
Thesis: Statutory provision for physical education in the United States from 1899 to 1930.

HUNG-CHIH HSUEH
Thesis: Secondary education in China—A statistical presentation.

KO-WONG HUNG
Thesis: New emphases for the Chinese elementary school—A study of increasing school efficiency.

WALDEMAR JOHN JAEGER
Thesis: Supreme court and appellate court decisions in California relative to teachers.

EMMA VANNOY JAMISON
Thesis: A graded book list for primary children.

RUSSELL RUEBEN JOHNSTON
Thesis: Social extra-curricular activities and fraternities in the senior high schools.

HELEN ELEANOR KAUFFMANN
Thesis: Content for general language course.

DOROTHY EMILEE KIMBERLIN
Thesis: Difference in adjustment of rural and city school children upon entering the low 9th grade in a city school.

BENJAMIN EDWARD LARSON
Thesis: Relationships among intelligence, scholarship and participation in extra-curricular activities in high school.

ARTA FRANCES LAWRENCE
Thesis: A study in first-grade reading vocabulary.

EDWARD WILLIAM LIGHTON
Thesis: Language difficulty and its measurement among Spanish-American junior high school students.

MING YUEH LIU
Thesis: Chinese education under "The Three Principles of the People."

NEAL JOSEPH LOHMAN
Thesis: Public school publicity in the San Francisco Bay region.

KATHERINE BURRELL LOUD
Thesis: A consideration of some of the causes of failure in the junior high school.

RAYMOND HUGH MCCLINTIC
Thesis: A survey of the extra-curricular activities of the San Jose schools.

HOVEY CLYDE MCDONALD
Thesis: Recreation for teachers.

DUNCAN MCRUER
Thesis: The pre-test as a stimulus to learning activity.

JOHN PHILIP MCVEY
Thesis: Subject and grade costs of instruction in the high schools of Arizona.

HENRY WALTER MAGNUSON
Thesis: A study of the relation between teacher judgment, intelligence and grades received by eighty scholastically superior university seniors.

RAY STODDARD MERRILL
Thesis: A proposed plan of junior colleges for Utah.

DAVID RUSSELL METZLER
Thesis: Adult education in the junior college.

FRANK MYRON MILLER
Thesis: A study of the certification of teachers in the State of California, 1849-1880.

BRUCE EMANUEL MILLIKIN
Thesis: The junior college in Utah—A survey.

EDUARDO FAUSTO MONTANA
Thesis: Secondary education in the Philippine Islands under the Spanish Régime and up to the present time.

BLANCHE ANNA NAYLOR
Thesis: Efforts that have been made to promote world peace.

MARY BERTINA NELSON
Thesis: The correlation values of English in the secondary school.

DONALD ROSS NUGENT
Thesis: Palo Alto elementary school sites.

ROYAL WHEELER PARK
Thesis: Health problems in private junior military academies.

RUTH ANITA PATTERSON
Thesis: Evaluation of a personal rating blank as used for graduate students.

MARGARET PAXTON
Thesis: Predicting success in junior high school algebra.

EDWARD HORRALL REDFORD
Thesis: A study of journalism in American secondary schools.

MARIAN ELIZABETH REED
Thesis: The English curriculum in junior colleges.

ROBERT MORRISON REID
Thesis: A study of industry and perseverance among elementary school pupils.

LILLIAN ANTOINETTE REINKING
Thesis: Prediction of college success—A study in educational guidance.

DAVID JOHN ROACH
Thesis: The high school civics curriculum.

JOHN PRESCOTT ROBINS
Thesis: Should junior colleges be established in Oregon?

MAURICE BURSK ROSS
Thesis: Graduating class activities in high schools.

WALTER CHARLES SCHLEIN
Thesis: The organization and administration of the Alexander Hamilton Junior High School of Fresno, California.

MAY VIOLET SEAGOE
Thesis: Factors influencing the selection of associates.

FREDERIC THOMAS SHIPP
Thesis: A Christian education program for the Korean Y. M. C. A.

CLAUDE ARCHER SHULL
Thesis: Supplementary reading in lower division social sciences.

ELIZABETH VERNA SKELTON
Thesis: The teaching of speech in the junior high school.

ARTHUR DAVID SMITH
Thesis: A study of gymnasiums.

MERRILL JEFFERSON SMITH
Thesis: A study of the alumni of the New Mexico Military Institute.

WEIR GAILEY SMITH
Thesis: Proposed Reorganization of the elementary schools of Kings County.

LUCILLE HOLBROOK SNYDER
Thesis: A survey of certain aspects of the commercial department of the San Jose High School.

HENRY RICHARD SPIESS
Thesis: The organization and administration of an exceptional school unit.

HOLLICE ERWIN STEVENSON
Thesis: A statistical analysis of California secondary school districts.

GENEVIEVE MARGARET SWAIN
Thesis: Speech correction work in California public schools.

ESTELLA BOWEN CULP TENER
Thesis: To prove that a unit credit system of individual instruction will function in rural schools.

FAITH OTHA THOMAS
Thesis: The value of a Camp Fire Girls organization as an extra-class activity.

HELEN STANLEY THOMAS
Thesis: Physical and biological science experiments for third-grade children.

LAWRENCE GREGG THOMAS
Thesis: Motives influencing selection of summer schools—A comparative study of administrative and student appraisals of advantages offered by summer sessions of California teachers colleges.

CLYDE WARNER TUPPER
Thesis: The influence of certain factors upon success in a bookkeeping class.

IRA TWEEDY
Thesis: Can Idaho establish more junior colleges?

REBECCA FRANCES WEBB
Thesis: The relative achievement of Mexican and American children in the elementary school.

GEORGE MCCABE WHITFIELD
Thesis: Financing the Tacoma public school system.

OSCAR B. WILLIAMSON
Thesis: The effect of life career choice on the school work of the high school boy.

FLORENCE SUNSHINE WILLIAMS
Thesis: A course in high school art adapted to the individualized study plan.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

of California Quarterly of Secondary Education published quarterly at Berkeley, California, for October 1, 1930.

State of California } ss.
County of Alameda }

Before me, a notary public in and for the State and county aforesaid, personally appeared Horace M. Rebok, who, having been duly sworn according to law, deposes and says that he is the business manager of the California Quarterly of Secondary Education, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, California Society of Secondary Education, Berkeley, California.

Editor, Horace M. Rebok, 2163 Center Street, Berkeley, California.

Business manager, Horace M. Rebok, 2163 Center Street, Berkeley, California.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) California Society of Secondary Education, 2163 Center Street, Berkeley, California, (no stock) a non-profit corporation operating through membership fees.

A. J. Cloud, President, City Hall, San Francisco, California.
George C. Thompson, First Vice-President, 1232 St. Charles Street, Alameda, California.
Ethel Percy Andrus, Second Vice-President, 3141 Kenneth Road, Glendale, California.
Horace M. Rebok, Secretary, 2163 Center Street, Berkeley, California.
Bank of America, Treasurer, Berkeley, California.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is X. (This information is required from daily publications only.)

HORACE M. REBOK.

Sworn to and subscribed before me this 28th day of September, 1931.

GLENDORA SEE,
Notary Public in and for the County of Alameda, State of California.
(My commission expires January 30, 1934.)